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THE
DUBLIN JOURNAL
OF
MEDICAL SCIENCE.

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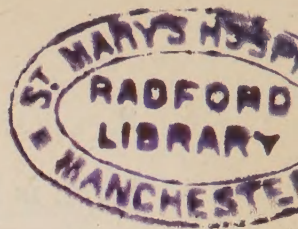
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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

JULY 1, 1897.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*On the Dissemination of Micro-organisms and on the Best Method of Destroying Germ Emanations from Sewer Gas.*^a By CHARLES R. C. TICHBORNE, F.C.S., F.I.C.; Dip. in Pub. Health, R.C.S.I., &c.

THERE are two characters of germ contagion, which may perhaps be best illustrated in the diseases of scarlatina and enteric fever.

In scarlatina we know that the contagion is largely conveyed by the desquamation.

In enteric fever the germs which are carried by sewer gas are supposed, with considerable force of evidence, to be a fertile source of spreading the disease.

In scarlatina we assume that the "Raft Theory," as Tyndall called it, plays an important part, whilst in the latter we must assume that the contagion is often carried with the vapours which emanate from the drains.

In my present communication I do not propose to deal at any length with the subject of the transmission of germs by the raft theory. It is fairly understood by most physiologists and bacteriologists, but I may as well concisely describe it as most scientists understand it. Now we assume that the ordinary atmosphere, let us say at the sea

^a Read before the State Medicine Section of the Royal Academy of Medicine in Ireland, on Friday, April 30th, 1897.

level, is largely contaminated with a visible and ponderable matter which we term atmospheric dust. This atmospheric dust is found largely present in our homes, and also in the streets of populous towns. It consists of ponderable atoms, which at an altitude of a few feet almost entirely consist of organic matter. This fact was conclusively demonstrated by Tyndall's beautiful experiments in producing what he called optical vacuums by the combustion of the organic matter. The coarser particles of this atmospheric dust act as a kind of floating raft, and carry on their surface the finer structures of life. In the case of such a disease as scarlatina we can easily see how this raft theory plays an important part in the dissemination of the desquamation.

Even the smallest germs that our microscopes have yet revealed have a certain weight. This fact is shown by the absence of germs at high altitudes—such as Mont Blanc, or in a very still atmosphere, such as is found in the vaults of St. Michan's Church. I demonstrated this as far back as 1870, in an "Afternoon Lecture," delivered at the Royal Dublin Society. I showed that flasks placed all night in the vaults of St. Michan's Church were, when sealed next morning, optically empty, or free from atmospheric dust, and were therefore free from germs. We get in these vaults exactly the same result that we should find on the top of Mont Blanc. I believe this sterility of the atmosphere of St. Michan's Church has been the subject matter of one, if not more papers read before this Academy. I am sure it had escaped the author's observation that the ground had already been "prospected."

It is worthy of note that the greater part of practical bacteriology is now worked out by an observation which, I think, originated with Tyndall—that cotton wool was a perfect filter as regards this atmospheric dust, and that it not only acted upon the coarser particles but separated the finer micro-organisms.

I may be excused for still further referring to my own researches in this direction, mention of which will be found in the later editions of "Parkes' Hygiene," by De Chaumont. I was able to demonstrate that even the dust at the top of Nelson's Pillar contained over 29 per cent. of organic matter and that it was capable of setting up the lactic fermentation

in a neutral solution of sugar of milk. Here is a solution of sugar of milk and lime, which although sterilised, when brought into an ordinary room containing atmospheric dust has fermented, and become solid by the formation of calcium lactate. The atmosphere at every yard that we rise from the ground becomes freer from the ponderous earthy constituents, but richer in germs. Of course, we at last come to an altitude where even the micro-organisms become scarce, and to such regions as the high altitudes of Switzerland where the germ is unknown. Even on the Mer de Glace the germs may be said to be absent.

So much for the raft theory, which will account for the dissemination of any germs, providing they have arrived at the dry condition, or that they can be attached to a dry particle. What can be more easy to conceive than the spreading of scarlatina by a process such as this. It is almost self-evident.

But there is another mode by which preventable disease is propagated which has never, to my mind, presented such a lucid explanation as regards its propagation. I refer to the theory which supposes that a certain germ, let us say like that accompanying enteric fever, cholera, or the poison of yellow fever, is capable of acting as a poison when evolved in sewer gas.

We have an organism which, when carried in water or brought mechanically to a receptive surface, is capable of producing disease, and yet we also find that it is capable of rising in such a vapour as in sewer gas. I use the term "vapour" not in the vulgar sense, which assumes a non-permanent gas capable of condensation, but in the sense that means anything flying, or escaping off. In this sense atmospheric dust is volatile.

Two special diseases are supposed to arise from the air of sewers or fæcal emanations—typhoid fever and diarrhœa. Yet if these diseases are caused by bacilli how are they volatilised, for however minute, these bacilli are still organic structures developed in the liquid fæcal matter. Although a germ is so small that our finest balance will not weigh it, and although it may only be $\frac{5}{1000}$ ths of a millimetre in length we might as reasonably conceive that the coarser microscopic life, such as rotatoria or entomostraca, which we can

almost see with our eyes, would be volatilised as a vapour as to conceive that pathogenic microbes would be so transmitted. Prof. Frankland has shown that liquid sewage matter is not likely to be scattered into the air, except by gas generated in it. He experimented with lithia, a chemical substance not volatile, but which could be easily detected by the spectroscope, and might be said to represent micro-organisms. He found that no ordinary agitation of the sewer water would produce indications of lithia in the air, but that directly gas began to be generated in the sewage, by decomposition, the bursting of the gas bubbles carried lithia into the air.^a

Now, I think here is the clue to the dissemination of microbes, but not exactly in the direction which he indicated. Such a condition of sewage—*i.e.*, in active fermentation—is hardly conceivable in a general sense in the better constructed drains found connected with houses of a good class—the houses, in fact, where typhoid seems to luxuriate.

We must suppose, however, in a system of town sewage, certain spots in the mains, where, from the Frankland cause, the microbes are scattered into the air during fermentation, or let us say violent concussions breaking the sewage into spray. And then comes the question—how are they disseminated through the whole area of the air space of the system of drains? I can easily conceive that they are there carried by a condensed vapour, exactly represented by ordinary dew at certain hours of the night, just as we see the rising vapour settling as dew in a valley. I believe that the temperature of the water laden vapour of the sewer is lowered by meeting with the layer of cold night air through the open traps which determines a dew point in the sewers themselves. I find, from actual experiment that the temperature of the sewer water as it flows from the large sewers, or the temperature of the gas in the mains, is generally 2 or 3 degrees above the temperature of the night air. The gas mains bear a somewhat similar position underground to the sewers, and give a very good idea of this variation of temperature. A variation of as much as 10 to 15 degrees may be observed. Even a sudden rise

^a Proceedings of the Royal Society, 1879.

in the barometer will just determine the deposition of the liquid portions of the gas in the mains, and in the same manner will also determine, even more energetically, a dew line in the sewers. Each particle of dew becomes a raft which will carry microbes upon its surface, perhaps for miles, as long as this "dew" condition lasts; and as the sun's warmth dissipates the morning dew the water raft disappears, leaving the microbes suspended in mid-air—or, suppose that if the sewer dew is carried into a warm shaft connected with a dwelling-house, is not the assumption apparent that again we have the water rafts converted into permanent gas, whilst the now dry germs float about seeking whom they may devour?

I will just conclude by a few remarks upon sewage disinfection from this point of view. The disinfectants employed in sewage purification can hardly be viewed as actual germicides. The modes in which they are necessarily used create such an amount of dilution that they can be viewed only as retarders of the development of microbes. It is, no doubt, chiefly from this reason that they are not more extensively used in sewage purification. The return in results, as regards the prevention of diseases, is not commensurate with the great expense of oxidisers, such as permanganates and hypochlorites. They are not in favour, because unless they are used in overwhelming quantities they are worse than useless. They destroy myriads of microbes, but allow myriads to escape—and to the remainder they only seem to add fuel to the fire. It is true that at the pumping stations in London, manganate of sodium is used, or was used, but in such a case it is merely employed as a deodoriser at the end of the process, whilst the supernatant fluid is poured into the river.

From the reason of cheapness crude carbolic acid (which may be considered to owe its virtue to phenol, cresylic acid, and a little naphthalene) is extensively used. Although not a very decided germicide, phenol still holds an important place as one of the most valuable retarders of germ development. Naphthalene is still more powerful, and may be looked upon as a germicide proper. Although very cheap, it has one objection, namely, its great insolubility.

I have here a fluid which I have used with some success

for years in controlling or instantly stopping germ development, for which there are many occasions when the use of mercuric chloride is inadmissible.

It consists of:—

Crystallised Phenol	...	...	1 part.
Camphor	...	...	3 parts.
Naphthalene	...	...	$\frac{1}{2}$ part.
Coloured with rosaniline carbolate.			

It will be observed that though these are all solids they form a fluid on rubbing together. One drop of this liquid will instantly arrest any tube of microbe culture in gelatine at a given point, and may be used with advantage to place on record comparative experiments with microbe cultures.

In such an experiment I have found it advantageous to use a little stiffer nutrient gelatine than that given in Crookshank's work. I increase the formula given there from 100 grammes of gelatine to 120 grammes (*vide* Crookshank's Manual of Bacteriology, 3rd edition, p. 83).

Now it is a similar preparation to the above preservative which I should propose for sewage purification, with one modification which I consider invaluable. Crude carbolic acid (phenol) is comparatively cheap, and naphthalene may be viewed as a waste product in the process of coal tar distillation. For the camphor I would substitute terebene, which may be looked upon almost as a liquid camphor. Where the sewers of a large city are being provided for, or where cost is a question of importance, the light oils of tar may be substituted.

Now I will describe the scientific theory, by which, I believe, this disinfectant can be made a trap for typhoid bacilli or germs of a like nature in sewer gas.

The principle involved consists in adding some liquid body which shall bring the specific gravity of the antiseptic below the gravity of the sewer water. When such a body is used the antiseptic fluid forms at once a fine pellicle of antiseptic material. All fluids that are volatilised or mechanically eliminated by the escape of gas must pass through the germicide layer. If carbolic acid or the crude phenol products are used by themselves, we find, in practice, that they immediately sink to the bottom of the flowing sewage which passes along over the top in a continuous stream of

untouched pollution. The crude products obtained from the distillation of coal tar are specially suited to this purpose. When coal tar is distilled in the first instance it is divided into two divisions—one is called “light coal tar oil,” and the other “heavy coal tar oil.” The first contains all the products which come over as long as they will float on water, and they are specially rich in the benzene, naphthalene and terebene series, all of which are powerful germicides. By substituting these oils for terebene we get an antiseptic fluid which immediately spreads on the surface of the sewage, locking in the deleterious vapours, and at the same time passing downwards the heavier antiseptics, such as the phenols, through the sewage by the simple act of solution.

This can be illustrated by the following simple experiment. If we pass, by a pipette, a layer of carbolic acid into a shallow dish of water, and after standing some little time draw off some of the supernatant water, we shall find on testing it with a little bromine water, that it contains no carbolic acid. If, in a second experiment, we use such a mixture as I have specified, but which must have a specific gravity of $\cdot 850$ to $\cdot 950$, we shall find, on introducing it into the water with the pipette, that it immediately rises to the surface, and if we at once remove some of the water from the interior it gives, on testing with bromide water, a copious precipitate, showing that the carbolic acid has permeated at once through the water which represents the sewage. We should further find, on examining this fluid, that the powerful antiseptic naphthalene had been carried with it.

I have endeavoured in the above experiments to show why, in many cases, the use of carbolic acid has been a practical failure as a sewage purifier, and to indicate that, in dealing with such contagions as are diffused through sewer gas, a principle should be adopted in the use of antiseptics. This principle has not, as far as I know, been openly enunciated—namely, that we must disinfect from the surface of the flowing sewage, and not from the bottom.

ART. II.—*The Report of the Vaccination Commission, 1896.*^a

By ALFRED E. BOYD, M.B., B.Ch., Univ. Dubl.

IN bringing the subject of the Vaccination Commission's Report before the Royal Academy of Medicine I do not do so with the idea of defending the practice of vaccination. Such a course would be mere waste of time in an audience composed of medical men, who, if they believe in anything, must believe in the usefulness of the practice.

In view, however, of the recommendations of the Commission, and as the subject will soon be brought before Parliament in order that the recommendations may be carried into effect, it is well that all interested in the public health should consider well the present state of the case.

What the provisions of the Bill to be introduced next Session may be we do not yet know, but it is certain that the "Anti-vaccinationist" Party will endeavour to do away with the principle of compulsory vaccination, which has been in force in England since 1850. The Report is a voluminous document of 220 pages, the result of seven years' work. During this time the Commission held 136 meetings, examined 187 witnesses, and investigated 6 epidemics.

The members of the Commission were appointed on the 29th of May, 1889, their names being as follows:—Baron Herschell, Sir James Paget, Sir Charles Dalrymple, Sir W. G. Hunter, Sir Edwin Galsworthy, Sir William Savory, Mr. Charles Bradlaugh, Dr. J. S. Bristowe, Mr. W. T. Collins, Mr. Dugdale, Dr. Michael Foster, Mr. Jonathan Hutchinson, Mr. J. A. Picton, Mr. Samuel Whitbread, and Mr. F. W. White. Of these Mr. Bradlaugh died soon after the appointment of the Commission, his place being taken by Mr. J. A. Bright. Sir William Savory and Dr. Bristowe died at a later period, and their places remained unfilled.

The scope of the inquiry was defined as follows:—

- (1.) The effect of vaccination in reducing the prevalence of and mortality from small-pox.
- (2.) What means other than vaccination can be used for diminishing the prevalence of small-pox, and how

^a Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland, on Friday, April 30, 1897.

far such means could be relied on in place of vaccination.

- (3.) The objections made to vaccination on the ground of injurious effects alleged to result therefrom, and the nature and extent of any injurious effects which do in fact result.
- (4.) Whether any, and if so what, means should be adopted for preventing or lessening the ill effects, if any, resulting from vaccination; and whether, and if so by what means, vaccination with animal vaccine should be further facilitated as a part of public vaccination.
- (5.) Whether any alterations should be made in the arrangements and proceedings for securing the performance of vaccination, and, in particular, in the provisions of the Vaccination Acts with respect to prosecutions for non-compliance with the law.

Before going into the evidence regarding the effect of vaccination in reducing the prevalence of and mortality from small-pox it is well that we should briefly study the history of the disease and note its characters prior to the time of Jenner.

“A view very generally taken teaches that small-pox introduced from the East began to be common in Western Europe during the fifteenth century, though perhaps existing still earlier; that it increased during the sixteenth and seventeenth centuries, especially the latter, and that it was very prevalent during the eighteenth century” (Report, sec. 35).

Corfield states that “during the last century this disease killed on an average nearly half a million of people in Europe annually, and was severely epidemic about once in three years. In some years it caused half the deaths of children under ten years of age. It produced frightful disfigurements of the features, and caused from one-half to two-thirds of all the cases of blindness in Europe. In Iceland, in the year 1797, it caused a third of all the deaths in the island. Among the North American Indians it spread like ‘a fire consuming the dry grass of the field, and persons who were not yet attacked by it slew themselves and

their families rather than face this terrible disorder.' It spared no age, no rank of life, and no country, nor was it deterred by any climate. As lately as 1772, Maitland speaks of 'the havoc made in great families not many months since by that mighty disease,' which seemed then to go forth like a destroying angel, subduing all before it. Six members of the family of William III. died of it, while he himself suffered severely from it, and was permanently marked by it. Dr. Guy points out that 'in the last ten years of the century it was more than one hundred times as fatal as diarrhoea and its allied diseases, six times as fatal as apoplexy, palsy, and sudden death taken together, and seven times as fatal as the measles. During the last century, in fact, it caused in England one death in every twelve from all causes, and in France one in every ten' " (*The Laws of Health*, W. H. Corfield, M.A.).

In the town of Ware, in Hertfordshire, in 1772, out of a population of 2,515 at the beginning of the epidemic, 1,601 had previously had small-pox, leaving 914 susceptible persons. Among these there were during the epidemic 612 cases with 72 deaths, leaving at the end of the epidemic 302 persons, who having escaped the attack are spoken of in the record as "to have the small-pox." This gives the proportion of those who had had small-pox before the epidemic as 64 per cent., while after the epidemic it was 82 per cent. of the population.

In Chester, with a population of nearly 15,000, 85 per cent. had had the disease before the epidemic of 1774, while after the epidemic the percentage was 93.

There is no reason to think that the condition of things in Ware or in Chester was exceptional; it may probably be taken as illustrative of the condition of things elsewhere. (secs. 47, 48.)

The practice of inoculation for the small-pox began definitely in England towards the end of the first quarter of the 18th century. The first clearly recorded case in England is that of the daughter of Lady Mary Montague, inoculated by Maitland in London in 1721. It was found that the attacks induced by inoculation were, as a rule, milder and very much less fatal than the attacks of the natural disease,

the fever and constitutional disturbance being less and of shorter duration, and the eruptive pustules much fewer in number. Received at first with enthusiasm, the practice of inoculation gradually dropped into disuse only to come into favour again at a later period; and there can be no doubt that between the years 1770–1780 inoculation was widely practised in England, and to be so continued until the end of the century. Since the inoculated person was infectious, each case was a source of danger to those who, not protected by a previous attack, came into his company, and this danger was increased by the fact that the mild character of the inoculated disease in many cases permitted the patient to move about among his fellows (sec. 70).

Inoculation, therefore, while benefiting the individual, possibly increased the danger of the community.

That it did not always, however, benefit the individual, will appear from Jenner's statement, that—"Notwithstanding the happy effects of inoculation, with all the improvements which the practice has received since its introduction into this country, we sometimes observe it to prove fatal, and from this circumstance we feel at all times somewhat alarmed for its consequences" (*B. M. J.*, May 23rd, 1896).

Jenner observing the fact that persons connected with dairies who had contracted cow-pox while milking animals suffering from that disease were not susceptible to small-pox, proved experimentally that persons who had either taken cow-pox by contagion from the cow, or to whom it had been given by the operation of "vaccination," either with cow-pox matter from the cow or from a human being suffering from cow-pox, were equally insusceptible to the small-pox poison.

The results of his investigations were published in 1798. The practice spread rapidly during the first quarter of the present century, and prevailed widely.

It was beyond all question so adopted in the genuine belief that it afforded protection against small-pox (sec. 11.).

In 1802 the House of Commons made grants to Jenner and again in 1806, and annual grants were made to the National Vaccine Establishment which was founded in 1807, but it was not until 1840 that the first statute was passed dealing with the subject, entitled, "An Act to Extend the Practice of

Vaccination." By this Act guardians and overseers of every parish or union in England and Wales were empowered to contract with qualified practitioners for the vaccination of all persons resident in such unions or parishes respectively. By the Act of 1840 inoculation was declared to be illegal, and the use of it was made penal. In the year 1841 there was supplemental legislation dealing with the expenses of carrying out the provisions of the Act of 1840.

By these Acts there was no compulsion on parents or others to procure or submit to vaccination, but the public vaccinators were to vaccinate all who might choose to come to them for the purpose.

The principle of compulsion was first introduced in the Act of 1850. It related only to those who had not already been successfully vaccinated. It seems, therefore, that re-vaccination was not contemplated. Under this Act the offence of not taking a child to be vaccinated within three months of birth was a single definite offence, and defendant, having been once convicted and fined, could not be proceeded against a second time.

Under the Act of 1867 the guardians of a child are bound to have it taken to the Medical Officer of the Dispensary District in which child is resident for the purpose of vaccination, unless it has previously been vaccinated by a qualified person. Upon the same day of the week following the child is to be brought back to the dispensary in order that the Medical Officer may re-vaccinate if necessary or obtain a supply of lymph. The Medical Officer must give the parent or guardian a certificate of successful vaccination, and transmit a duplicate certificate to the Registrar of Births of the district in which child was born.

Further Acts were passed in 1871 and 1874, and at the present time—

Failure to have child vaccinated within three months of birth, in absence of reasonable excuse, renders parent or guardian liable to a penalty not exceeding 20s.

Any person who prevents a medical officer taking lymph at a dispensary is liable to a penalty not exceeding 20s., and failure to produce child when required to do so renders parent or guardian liable to a penalty not exceeding 20s.

The duties of prosecution are in the hands of the Boards of Guardians under the supervision of the Local Government Board.

These provisions are contained in the Irish Act of 1879. All this legislation is founded on the assumption of the efficacy of vaccination, and that it is the duty of the State to enforce it even by the imposition of penalties for its neglect. (secs. 86-127.)

We must now briefly inquire how far the assumption is justified.

The first quarter of the 19th century was characterised in this and other countries by a striking decrease of small-pox. In the London Bills of Mortality the returns of small-pox for the year 1800 are 2,409. This was the last return as high as 2,000.

From thence onward the numbers fell, especially after 1810, reaching in 1818 the low figure of 421, the fall being irregular, and marked by epidemics in 1812, 1817, and 1825.

A similar falling-off was noted in other parts of England, in Sweden, Denmark, and other countries of Western Europe, and in the United States (secs. 55-56).

One effect of the introduction of vaccination was the very great decrease in the practice of inoculation. Was this the cause of the decrease in small-pox? If so, in the 18th century there should have been a marked increase in the number of small-pox cases during the period when the practice of inoculation was most prevalent, but as far as the evidence goes, there was no such increase, nor is there of sufficient evidence to show that the discontinuance of the practice of inoculation was a distinct subsidiary cause of the decline of small-pox in the 19th century (sec. 75).

Was the decrease due to improved sanitary conditions?

There is really no evidence to show that the first quarter of the present century was in any way differentiated from the proceeding quarter or half of the 18th century in the matter of sanitary improvements, and any advance which there may have been was in no way proportional to the decline of small-pox. The decline, it must be noted, was equally evident in other countries in which no sanitary improvements were evident until a very recent period.

On the other hand, it must be noticed that wherever vaccination is introduced into a community previously unvaccinated, where small-pox is rife, the number of cases diminishes, and the type of the disease becomes milder (sec. 81).

Thus in Egypt vaccination was not introduced until 1827; up to that time small-pox was extremely prevalent, the decline which in Western Europe was marked during the first quarter of the century appears to have been absent there.

Similar observations have been made regarding the native tribes in North America, and also in Brazil.

There is no adequate evidence of a decline in unvaccinated countries like that which took place in vaccinated countries (sec. 84).

Speaking generally of the period since 1838, when the present system of registration of deaths commenced in England, there has been a marked, though irregular, decline in the death rate from small-pox (sec. 133).

If the improvements in sanitary conditions which have taken place during the last fifty years were the cause of the mortality from small-pox becoming less, we should expect to see that they had exercised a similar influence in the case of measles, scarlatina, whooping-cough, and indeed any disease spread by contagion (sec. 154).

In the case of measles, the decline in death-rate has not been at all comparable to that of small-pox. Until 1880 there was no sign of decrease in the death-rate of scarlatina. Small-pox stands alone as regards the decline in mortality, and that decline began with the introduction of vaccination.

The Commission investigated reports of six epidemics—viz., Gloucester, Sheffield, Warrington, Dewsbury, London, and Leicester. In Gloucester and Leicester the practice of vaccination had, to a large extent, been abandoned for some years prior to the recent epidemics in those towns.

In Leicester the percentage of births unaccounted for by the vaccinating officers, in 1892, was 80·1.

In Gloucester, in 1894, it was 85 per cent.

In Leicester the percentage of total small-pox deaths which occurred under ten years of age was 71·4, in Gloucester 64·5.

At Gloucester, 26 vaccinated children under ten were attacked, of whom 1, or 3·8 per cent., died.

Of unvaccinated children of similar age 680 were attacked, of whom 279, or 41·0 per cent., died.

Of vaccinated persons over ten 1,185 were attacked, of whom 119, or 10 per cent., died.

Of unvaccinated of similar age 88 were attacked, of whom 35, or 39·7 per cent., died.

It is unnecessary that we should consider the other epidemics—the figures are similar in each case; and, to use the words of the Report, “the conclusion is irresistible that some circumstance must have existed distinguishing the class selected as vaccinated from that selected as unvaccinated; the only condition which regulated the distribution of the cases into the one class or the other was the presence or absence of vaccination. It is only reasonable, therefore, to attribute the difference to vaccination” (sec. 219).

As regards the type of the disease—

If we take the epidemic at Warrington in 1891–92, Dr. Savill reports on the type of the disease in 661 cases, of whom 593 were vaccinated or doubtful, and 68 unvaccinated. He includes amongst the confluent cases those which were malignant or hæmorrhagic.

Of the 593 vaccinated cases—

323, or 54·5 per cent., were mild.

141, or 23·8 „ discreet.

129, or 21·8 „ confluent.

Of the 68 unvaccinated cases—

3, or 4·4 per cent., were mild.

17, or 25·0 „ discreet.

48, or 70·6 „ confluent.

That is, amongst the vaccinated cases—

54·5 per cent. were mild, and 21·8 per cent. confluent.

Amongst the unvaccinated—

4·4 per cent. were mild, and 70·6 per cent. confluent.

These figures are typical of the results obtained from the investigations of the six epidemics. There appears to be sufficient evidence to point to the conclusion that the greater the number of vaccination marks the greater the protection in relation to small-pox enjoyed by the vaccinated person.

Statistics show that of the fatal cases of small-pox among the vaccinated—

7·6 per cent. had 1 mark, 7·0 per cent. had 2 marks.

4·2 „ 3 marks, 2·4 „ 4 „

(Sec. 293.)

As to the effects of re-vaccination,—at Leicester, at the end of 1892, the staff of the hospital consisted of 28 persons; 14 of these had either had small-pox or had been re-vaccinated before the outbreak; 8 others were vaccinated at the time of the outbreak; the remaining 6, although they had not previously been re-vaccinated, refused to submit to the operation. Out of the 28, 6 were attacked by the disease, of whom 1 died; 5 of the persons thus attacked by the disease, including the one fatal case, were amongst the 6 persons who had refused to be re-vaccinated. The sixth case (a mild one) was that of a nurse who had been re-vaccinated ten years before (sec. 319).

Dr. Grimshaw states that at Cork-street Hospital, when he was on the staff of that institution, all the officers and servants were re-vaccinated, with the exception of one student who refused to be re-vaccinated. He died of small-pox!

At Cork-street Hospital, and also at the Hardwicke Hospital, during the epidemic of 1894–95, there was no single case of a recently successfully-vaccinated person contracting the disease.

With regard to “the effect of vaccination in reducing the prevalence of and mortality from small-pox,” the Commission, having reviewed the evidence, find—

- (1.) That it diminishes the liability to be attacked by the disease.
- (2.) That it modifies the character of the disease, and renders it (a) less fatal and (b) of a milder and less severe type.
- (3.) That the protection it affords against attacks of the disease is greatest during the years immediately succeeding the operation of vaccination. It is impossible to fix with precision the length of this period of highest protection. Though not in all cases the same, if a period is to be fixed, it might, we think, fairly be said to cover in general a period of nine or ten years.

- (4.) That after the lapse of the period of highest protective potency, the efficacy of vaccination to protect against attack rapidly diminishes, but that it is still considerable in the next quinquennium, and possibly never altogether ceases.
- (5.) That power to modify the character of the disease is also greatest in the period in which its power to protect is greatest, but that its power thus to modify the disease does not diminish as rapidly as its protective influence against attacks, and its efficacy during the later periods of life to modify the disease is still considerable.
- (6.) That re-vaccination restores the protection which lapse of time has diminished, but the evidence shows that this protection again diminishes, and that to ensure the highest degree of protection which vaccination can give, the operation should be at intervals repeated.
- (7.) That the beneficial effects of vaccination are most experienced by those in whose case it has been most thorough. We think it may be fairly concluded that where the vaccine matter is inserted in three or four places it is more effectual than when inserted in one or two places only, and that if vaccination marks are of an area of half a square inch, they indicate a better state of protection than if their area be all considerably below this (sec. 377).

With regard to "the objections made to vaccination, on the ground of injurious effects alleged to result therefrom, and the nature and extent of any injurious effects which do in fact result"—

The diseases alleged to have resulted were—*Tabes mesenterica*, diarrhœa, bronchitis, pyæmia, skin disease, syphilis, convulsions, cholera, diphtheria, pneumonia, atrophy and debility, whooping-cough, erysipelas, and scrofula—a fairly formidable list. With regard to these diseases the Report says: "We do not find any facts to warrant the assertion that the increased mortality from *tabes mesenterica* and scrofula, or any part of it, was due to vaccination. Without encumbering our Report with the details relating to pyæmia,

bronchitis, diarrhoea and skin diseases, which are all said to have increased owing to the mischievous influence of vaccination, we may confidently say that there is no evidence to justify the statement" (secs. 396, 397).

With regard to syphilis: "The evidence offered to us would lead to the belief that whilst with ordinary care the risk of communication of syphilis in the practice of arm-to-arm vaccination can, for the most part, be avoided, no degree of caution can confer absolute security" (sec. 430).

With regard to erysipelas: "There can be no doubt that even very slight wounds may lead to erysipelas. It has been induced by scratches of pins, abrasions from the dress and other injuries, in themselves most trivial. A vaccination wound is like one from any other cause, so long as it exists, a source of some risk" (secs. 412, 415).

"A careful examination of the facts which have been brought under our notice has enabled us to arrive at the conclusion that although some of the dangers said to attend vaccination are undoubtedly real, and not inconsiderable in gross amount, yet when considered in relation to the amount of vaccination work done they are insignificant" (sec. 415).

The final recommendations of the Commission are as follows: "We put the use of calf lymph to the forefront, because, as we have said, this would afford an absolute security against the communication of syphilis. Though we believe the risk of such communication to be extremely small where humanised lymph is employed, we cannot but recognise the fact that, however slight the risk, the idea of encountering even such a risk is naturally regarded by a parent with abhorrence. We think, therefore, that parents should not be required to submit their children to vaccination by means of any but calf lymph; but this should not preclude the use of humanised lymph in case they so desire. So long as the State, with a view to public interest, compels the vaccination of children, so long even as it employs public money in promoting and encouraging the practice, we think it is under an obligation to provide that the means of obtaining calf lymph for the purpose should be within the reach of all" (sec. 437).

With a view to diminishing hostility to the operation it is

recommended that there should be an extension of age within which vaccination is required (sec. 439), and that vaccination vesicles should not be opened unless for some adequate reason (sec. 447).

Other recommendations follow: the preservation of lymph in tubes in place of on dry points, the sterilisation of all instruments used in vaccination, the substitution of the second week for the eighth day as the time for the inspection of the vaccinated arm, and the right of parents to call in the vaccinator on account of unfavourable symptoms prior to the time fixed for inspection (secs. 448, 449, 450).

“We have no difficulty in answering the question, ‘what means other the vaccination can be used for diminishing the prevalence of small-pox?’ We think that a complete system of notification of the disease accompanied by an immediate hospital isolation of the persons attacked, together with a careful supervision, or, if possible, isolation for sixteen days of those who had been in immediate contact with them, could not but be of very high value in diminishing the prevalence of small-pox. It would be necessary, however, to bear in mind two conditions of success—first, that no considerable number of small-pox patients should ever be kept together in a hospital situated in a populous neighbourhood, and secondly, that the ambulance arrangement should be organised with scrupulous care.” However “we can see nothing to warrant the conclusion that in this country vaccination might safely be abandoned and replaced by a system of isolation” (secs. 499, 503).

The effects of keeping large numbers of small-pox patients in a hospital situated in a populous neighbourhood are well seen in two diagrams which I have abstracted from Parkes’s *Hygiene*. Similar effects have been observed in Sheffield, Leicester, Warrington, and other places (sec. 474).

Further recommendations are—That power should be given to sanitary authorities to give compensation for loss of wages occasioned by isolation (sec. 506); that notification of small-pox should everywhere be made compulsory (sec. 534); that increased powers should be given to the local authorities with regard to common lodging-houses (sec. 507); that re-vaccination should be encouraged without being made

compulsory (sec. 533); and that persons committed to prison by reason of non-payment of penalties under the vaccination laws should no longer be treated as criminals (sec. 535).

The weakest part of these recommendations is, I think, with regard to re-vaccination. In these days of compulsory education, means could surely be found for re-vaccinating children at the time when they enter school. No doubt there would still be a large number unaccounted for, but, on the whole, the number of re-vaccinated persons would be larger than it is at present.

When the Commission deals with the question of those who have an "honest" objection to vaccination, it makes a suggestion, but offers no very satisfactory advice as to how the suggestion could be carried out. The Report says:—"After careful consideration and much study of the subject we have arrived at the conclusion that it would conduce to increased vaccination if a scheme could be devised which would preclude the attempt (so often a vain one) to compel those who are honestly opposed to the practice to submit their children to vaccination, and, at the same time, leave the law to operate as at present to prevent children remaining unvaccinated owing to neglect or indifference of the parent." It is suggested that it might be provided that if a parent attended before the local authority and satisfied them that he entertained such an objection no proceedings should be taken against him; or, again, a statutory declaration to that effect before anyone now authorised to take such declaration, or some other specified official or officials, might be made a bar to proceedings. "We do not think it would be any real gain to parents, who had no conviction that the vaccination of their children was calculated to do mischief, to take either of these steps rather than submit to the operation" (sec. 525).

While recognising the fact that the anti-vaccinationist cause has been assisted to a very great extent by the martyrdom of a few of its adherents, I fail to see that the procedure here suggested could possibly be free from abuse.

In the first place we are not told what is meant by the phrase "honest objection." Can an objection founded on ignorance be properly termed "honest?" Is the "honest objector" to be freed from his obligations by a statutory

declaration in the case of laws dealing with matters other than vaccination? If so we may, in the future, expect to hear of publicans with "honest objections" to Sunday closing, and of members of the peace societies who have "honest objections" to income tax on the ground that the War Office is directly or indirectly supported thereby. Though these instances may be fanciful, I think the course suggested would form a very dangerous precedent if once legalised.

Again, the recognition of "honest objections" would put a premium on the endeavours of busybodies to convert the ignorant to anti-vaccinationist principles. Who could blame a fond mother for wishing to make a statutory declaration before a magistrate on hearing the terrible and oft-repeated tales of syphilis, erysipelas, and tuberculosis, to say nothing of leprosy and all the other diseases which are said to be due to this practice? Once excite the mother's fears and in nine cases out of ten it will be impossible to get her to listen to reason, and in time the Vaccination Acts will become, for practical purposes, dead.

The Report of the majority is signed by eleven of the thirteen members of the Commission.

Sir William Hunter and Mr. Jonathan Hutchinson add that they are unable to recommend relaxation of the law with respect to the above suggestions, and recommend compulsory re-vaccination; while Mr. Whitbread, Mr. White, Dr. Collins, and Mr. Picton express their dissent from the proposal to retain in any form compulsory vaccination. They recommend that conscientious objection on the part of the parent should be respected, and that the offer of vaccination should be made at the home of the child, leaving the parent free to accept or reject the offer.

Dr. Collins and Mr. Picton alone dissent from the majority of the Commission in their opinion regarding the efficacy of vaccination.

I have gone into the evidence taken before the Commission very imperfectly; but I commend to your consideration its recommendations, based on the most elaborate accumulation of proof of the efficacy of vaccination as being of vast importance to all who are interested in the public health.

ART. III.—*Clinical Pictures of Children's Diseases.* By
LANGFORD SYMES, M.R.C.P.I., &c.; late Clinical Assistant,
Deputy Medical Registrar and Pathologist, Hospital for
Sick Children, Great Ormond-street, London.

(Continued from Vol. ciii., page 485.)

VII. TREATMENT OF DIARRHŒA.^a

IN treating diarrhœa in children very distinct objects must be kept in view, and our remedies given on a true scientific basis. Recollect:—Poisoning and fermentation from micro-organisms; indigestible and undigested food with deficient evacuation, and a profuse and dangerous drain of water from the system. The slightest remedy relieves the mild cases, while others are hopelessly incurable in the absence of a suitable antitoxin.

1. *General management.*—Keep the child warm; wrap up the legs and arms in cotton wool; place hot bottles round the child in bed; apply a wool jacket and a flannel binder. This heat is of the first importance. Normally our main loss of heat is through the skin, and the smaller the animal the greater proportion is there of superficial area to body-weight, and therefore the greater the loss. In small children, then, all heat must be preserved, and especially where diarrhœa exists. See that the nurse is scrupulous in her cleanliness. Clean, dry napkins must be constantly at hand and applied; the bed must be level, smooth, and fresh linen put on the moment it is required, and the child should lie in a dry, warm, clean cot, with the cleanest of clothes around it.

Procure all the rest possible. Relieve eruptions, irritations, excoriations, by suitable powders, as oxide and carbonate of zinc, with a little boric acid, or a weak carbolated solution of subacetate of lead. Carefully attend to the mouth. Daily cleansing will be necessary to remove fungi of thrush, if present. Glycerine of borax, diluted peroxide of hydrogen (2 per cent.), or salol in glycerine, are excellent applications.

2. *Remove irritating particles of food.*—Give a purgative

^a Read before the Medical Section of the Royal Academy of Medicine in Ireland, on Friday, April 9, 1897. [For the discussion on this paper, see page 68.]

to stop the purging. Nature makes strenuous efforts to perform this herself. In the profound collapse of choleraic cases a purgative is scarcely safe, but no hard and fast rule can be laid down, as it depends on the state of the child's strength. The best drug is castor oil. It affects the stomach and upper portions of the small intestines. There are two ways of giving it. A full dose acts directly as a thorough purge, and clears the bowel; a drachm is quite sufficient for a child 1 year old, and 3ss. for a younger infant. The earlier this is given the better. In chronic attacks 10 to 15 minims given daily, in the mornings, is best for some, if continued for a long time. The second method is to give $\text{m } 5$ every hour. This is very soothing for small children. An extremely useful prescription is:—

R—Olei Ricini, $\text{m } 5$.

Mucilag. Acaciæ, $\text{m } 15$.

Aquæ Menth. Pip., ad. $3i$. Given every hour.

If thought advisable, $\text{m } 1$ of the liquor hydrarg. perchlorid. in each drachm of the castor oil mixture does great good. Olive oil is suitable for very young infants. Fluid magnesia, liquorice powder, Tamar Indien, or elixir of senna, for older children. The syrup of rhubarb also acts well. Another useful mixture is:—

R—Pulv. Rhei, gr. i .

Sodii Bicarb. gr. $\frac{1}{2}$.

Syrupi Zingiberis, $\text{m } 8$.

Aquæ Menth. Pip., ad $3i$.

The administration of a purge in the collapsed states of severe infective summer diarrhoea, is an extremely serious question. It can be decided only by a thorough grasp and appreciation of the case in point.

2. *Diet.*—This complaint is a diet disorder, therefore much care is necessary with the food. Milk is not truly a liquid diet, for it solidifies in the stomach. The upper classes and the very low classes frequently do not nurse their children; the middle classes do, for they are neither too fashionable to ignore it, nor have they to labour, and so hand-feed the infant. Undoubtedly, pure fresh milk is best unboiled if the source is known to be pure, but in cities it is, perhaps, safest to boil it before use.

- (a.) *Change the Milk at once*, except for infants at the breast, who should get nothing else, and this only at regular intervals. The fact that the child has diarrhœa is sufficient proof that the food disagrees. If a wet nurse is employed, the greatest care must be taken in the selection.
- (b.) *Diluted Milk*.—Equal parts, or $\frac{1}{3}$ of pure water, breaks up the curd. Barley-water makes the curd less firm. Soda-water is excellent if the child will take it; the effervescence smashes up the curd by the bubbles of air. Lime-water, by virtue of its alkalinity, is often used, but if for the express administration of lime it is useless. There is more lime in cows' milk than in lime-water—cow's milk contains 1.51 per cent., and lime-water 0.14 per cent. A few drops of the saccharated solution is best if lime is required medicinally. Plain boiled water is a good diluent, or one ounce each of milk, lime-water, and boiled water.
- (c.) *Humanised Milk* contains less curd and more cream. The only scientific way of feeding infants artificially is by regulating the percentages of proteids, fats, and sugar. In rough terms we should keep the proteids near 1 per cent.

Cream Milk:—

Milk	-	3 ounces.	
Water	-	3	„
Cream	-	1	„ (20 per cent. fat)
Lime-water		1	„
Milk sugar		3 drachms.	

Cream milk is specially prepared by the Aylesbury Dairy Co. in London for infants. Equal quantities of cows' milk and a nine per cent. solution of lactose are passed through a separator so arranged that the outgoing streams are equal (cream milk and skim milk.) The cream milk is Pasteurised and supplied in vacuum-stoppered bottles.

Gartner's Milk:—Equal quantities of cow's milk and sterilised water are poured into a centrifugal separator similarly arranged that the outgoing streams are equal. The cream milk thus obtained is an excellent substitute for human milk.

Rotch^a has devised 13 scientifically humanised mixtures of various compositions suitable from birth to the age of weaning, with definite percentages of proteid, fat, and sugar, for which the Profession is indebted to him.

A simple process is :—Skim the cream off, divide the milk in half, make rennet whey of one half, and mix all three together again, leaving out the curds. This is approximate.

The humanised milk supplied by the Aylesbury Dairy Co. in glass bottles is excellent.

Whey may be given with cream. 3ss. cream to ʒiv. whey, or whey and barley-water, or cream and barley in small quantities.

(d.) *Peptonised Milk* 2 parts; with water 1 part.

(e.) *Condensed Milk* if good is good, but the popular demand is for a sweet milk and not a good milk. The “*Milk-Maid Brand*” (Anglo-Swiss) contains more fat (10·92 per cent.) than others, and is very good. The “*Ideal*” brand is also good. Some brands contain only 0·42 per cent. fat.

(f.) *Sterilised Milk*.—This is free from poisonous germs, but may, perhaps, produce scurvy unless mixed with some fresh milk or whey. Sterilisation devitalises milk, but one meal of fresh whey daily will prevent the onset of scurvy. Starr reported 5 cases of scurvy in 1895 in infants fed on sterilised milk. Recovery took place rapidly on unsterilised milk, raw meat-juice, orange juice, and citrate of iron. Some antiscorbutic element is destroyed by boiling the milk, but this danger has been greatly exaggerated. Milk is sterilised by exposure for 20 to 30 minutes to superheated steam. It is easily prepared for infants by “placing it in a china vessel which stands in cold water, the water being then boiled for 15 minutes.” This method is devoid of danger of scurvy or constipation, and is, for all practical purposes, sterilised though not boiled—(Dr. Kingston Barton, *B. M. J.*, Jan. 2, 1897, p. 14.) Professor Whitla advises “milk to be boiled on a water bath in small bottles plugged with sterilised wool for 15 minutes,” the bottles to lie in a

^a Cf. Dr. Cautley on Infant Feeding, 1897, p. 152.

saturated solution of boric acid. This milk remains good for 5 days.

Sterilised milk and barley-water may be mixed in varied proportions with 10 drops of liquor calcis saccharatus. Numerous sterilisers are in the market:—

Soxhlet's is suitable for home use, and moderately cheap;

Rotch's apparatus is simpler;

Hawksley has 3 kinds; while other apparatus are *Escherich's* (*Lancet*, Feb., 1891), *Starr's*, *Caillé's*, *Siebert's*, *Warner's*, &c.

(g.) *Pasteurised Milk* is milk raised to a temperature of 70° C. (158° F.) for half an hour, and then cooled rapidly. This will not render tuberculous milk perfectly innocuous, but will render the milk of a mixed herd safe. Its advantages are—taste and smell are unaltered, microbes present are destroyed, chemically it is not seriously changed, and fermentation is stopped.

(h.) *Attend to the Feeding Apparatus*.—A proper feeding bottle should have no tube, no angles, no indentations on glass, a wide mouth. It should be of transparent flint glass, easily cleansed, about 8 oz. in size, and impossible to be used by the child alone. It might also be graduated.

(i.) *Eliminate Starch from the Food*.—Bread-jelly, barley-water, rice-water, and Mellin's food seem the least disastrous of these, but they are often inadmissible.

(j.) *Stop the Milk altogether* in severe cases. Even whey will ferment.

There are many *substitutes for milk*. Raw meat juice is excellent for children; it is a good antiscorbutic. The scrapings of a rump steak against the grain; or shred, pounded, sieved, and strained through muslin, may be given, a drachm every 4 or 6 hours, sweetened. Gravy.

Gum Arabic in Boiled Water.—White of egg diluted or "albumin water" is the white of an egg cut in various directions with a clean scissors, shaken up in a flask, with a pinch of salt, and 6 ounces of pure cold water, strained through muslin and sweetened. This can be given alone or with mixed milk. Valentine's meat juice; Brand's jelly; veal or chicken tea; white wine whey; plenty of pure fresh water; beef essence; beef pulp; clear soup; chicken jelly;

the yolk of egg beaten into an emulsion, with hot water, strained and sweetened; raw meat jelly.

4. *Antiseptics to allay Fermentation*.—Thorough intestinal antisepsis is impractical, for in fully sterilising the bowel we may poison the child. Some antiseptics are strong poisons—*e.g.*, perchloride of mercury, carbolic acid; others are disagreeable, as iodoform, naphthalene, B-naphthol. Some are soluble and act in the stomach and higher intestinal tracts—resorcin, carbolic acid, mercury perchloride, lactic acid, sodium salicylate, &c. Others again are insoluble or decomposed in the intestine into antiseptic substances—calomel, salol, benzol, naphthol, bismuth salicylate. The most useful are:—

Calomel.—Given at once, with or after an initial dose of castor oil, in fractions of a grain frequently. It is of great use. Gr. $\frac{1}{10}$ every $\frac{1}{2}$ hour till 1 gr. has been taken. (In older children, of 5 to 8 years, it might be followed by a saline draught of Apenta water in the purely dyspeptic cases).

Resorcin.—Gr. $\frac{1}{2}$ to gr. 5 is active in the stomach and upper intestinal tract. It is non-irritating, is soluble and sweet. It may be given with glycerine and cinnamon water, and a carefully regulated dose of tincture of opium, or with bismuth carbonate and Dover's powder. Bulky powders, however, are inadvisable in young infants. Resorcin should be continued after the diarrhoea has ceased.

Bismuth Salicylate.—Gr. 1–3 every 4 hours. Tasteless, not unpleasant. Given abroad with gum arabic, sugar, and distilled water.

Benzol. Naphthol.—Dr. Soltau Fenwick uses up to gr. 30 per day. It is non-poisonous.

Sodium Salicylate.—Gr. 2–4 every 4 hours relieves gastric fermentation.

Hydrarg c. cret.

Liquor Hydrarg. Perchlorid.—m 1 doses.

Glycerine of Carbolic Acid.—m 1 to 4. Often usefully combined with a castor oil mixture.

Naphthalene.—Gr. 1–3.

Glycerine of Borax.—m 30.

Thymol., Listerine, Salol.

Lactic Acid is said by LeSage and Professor Hayem to check green diarrhoea. This is confirmed by others. One

drachm of a 2 per cent. solution may be given, or as a drink when mixed in proportions of a drachm to a pint of sweetened water.

5. *Intestinal Irrigation to eliminate Poisons.* Well worth trying. Out of 200 cases experimented on by Dr. Scokolow to test the efficiency of the ileo-cæcal valve, 130 were in children under one year. Of these 130 the valve was competent in only 27, while in 103 water passed freely through it into the ileum. This is encouraging, as in over $\frac{3}{4}$ of the cases the ileum was reached. In older children of from one to twelve years, out of 70 experimented on in only 33, or less than half, did the fluid pass the valve.

It must be a high irrigation of the bowel with a soft rubber catheter from a glass douche-can. First wash out the rectum, and then irrigate with normal saline solution or boric lotion used warm. Slight elevation of the douche-can is sufficient—18 inches. It is carried out in bed, and an Indiarubber bed-pan is a great help. A small enema is of no use. Rectal irrigation is one thing, but intestinal irrigation is quite another.

Washing out the Stomach is vigorously recommended by Dr. Vaughan with grs. 60 of sod. bicarb. in a pint of water at 100° F. Resorcin or boric acid solutions have also been suggested by Continental writers.

6. *Sedatives to allay Excessive or Abnormal Peristalsis.* The best of these is the dangerous drug *opium*. When carefully given it does no harm. A child of three months old might be given $m\frac{1}{4}$ of tincture of opium for a dose. A most excellent form is:—

R—Tinct. Camph. Co., m 1.

Glycerine Acid, Carbolic., m 1.

Olei Ricini, m 5.

Mucilaginis Accaciæ, m 15.

Aquæ Menth. Pip., ad 3i.—Frequently.

For a child one year old the dose of tinctura camph. co. may be 5 to 10 drops, or of Dover's Powder, gr. $\frac{1}{2}$.

Chlorodyne may also be given if carefully watched. The greatest care must be taken in the prescription of opium, for it is dangerous though useful.

In older children a very useful powder is—

R—Bismuth. Carb., gr. 3.

Sod. Bicarb., gr. 3.

Pulv. Ipecac Co., gr. 1.—Sumatur bis die.

We must recollect that if opium allays peristalsis, it also locks up the poison in the intestine.

7. *Restoratives for Collapse*.—Fresh, pure water to drink is strongly indicated. Water is essential to life, and constitutes more than half the entire body-weight. Proportionately the infant requires more than the adult. Frequent drinks of pure fresh-boiled water are urgently needed. If it cannot be given by the mouth, it may be injected warm into the rectum. The loss of water is extreme, and recollecting the dry condition of the tissues, we only respond to Nature's call when we administer it.

Stimulants are given by some and strongly withheld by others. If indicated brandy or strong coffee are suitable. Camphor, gr. $\frac{1}{4}$ to grs. 2 may be suspended in mucilage with glycerine.

A warm bath with a tablespoonful of mustard in a muslin bag in it, is advised by Dr. Goodhart, followed by wrapping in hot blankets. I have seen it resuscitate for a time, but death followed afterwards. The fact is we have, for choleraic cases, no effectual remedies.

Subcutaneous injections of horse serum were tried in Germany last year (1896). Out of 15 children injected with from 10 to 20 ccm. under the skin of the thorax, 4 died. One per cent. sterilised saline solution has also been given hypodermically—10 cc. at a time—with a Roux syringe.

PRECAUTIONS AGAINST DIARRHŒA.

Before leaving the subject, it would be omitting a most important thing, did one not allude to the prevention of this disorder.

All these diarrhœas could be prevented by attention to the following methods, and preventive treatment intelligently carried out would save thousands of lives annually in our large cities. The difficulty is in the organisation of these measures; they are:—

(a.) *The scientific regulation of artificial feeding*, involving such considerations as:—

The size of the child's stomach; its age and weight.

The quantity to be given at each feed.

The number of meals in 24 hours.

The selection and composition of the best substitutes for human milk.

The method of preparation.

The kind of apparatus.

The temperature of the food.

The manner of administration.

The preservation of the food.

The cleanliness of all apparatus.

(b.) *The purification of the ground.*—This is within the reach of the Public Health Authorities, and consists of sanitary improvements in overcrowding, ventilation, cleanliness of ashpits, sinks, sewers, disposal of refuse, drains, cleanliness of houses, premises, and yards.

It is from the superficial layers of earth that the poisonous organisms appear to be derived.

(c.) *The Purification of Milk.*—A recent writer says—"The management of our milk supply is a disgrace to a nation possessed of a scientific knowledge of the diseases dependent upon it." Our country is a long way behind Denmark in the management of its milk supply. Copenhagen is very well and scientifically supplied by a company. The various processes are carried out at 40° F., and it is supplied to the consumers at this temperature in carefully sterilised bottles sealed with clean new corks.

Some such outlines as the following are involved in this reform, and to ensure a pure milk supply it is suggested—

That cows should be grass-fed on pure pasture only.

That stall-fed cows, if existing, should get green fresh food, and no fermented foods as brewery grains, turnips, or oil cake should be used.

That cows should have a pure water supply.

That they should be kept very clean, groomed, and clipped, and their udders washed before milking.

That they should be periodically and most skilfully examined, and healthy animals only milked.

That sick or condemned animals should be at once removed from dairies.

That each animal should be branded on the horn.

That a Government License should in all cases be obtained to sell milk.

That cow-houses should be so constructed that the floors and walls can be washed down with a hose, disinfected, and the yards kept pure.

That no consumptive or other unhealthy people should be permitted to work in dairies.

That milk-cans should be of a regulation size and shape, so as to facilitate thorough cleansing by steaming and scouring, with dome-shaped bottoms, smoothly soldered joints, and easily cleansed taps.

That the milk should be properly cooled down to avoid development of micro-organisms.

That it should be kept in suitable covered vessels till used.

If milk is so delivered to the consumer, summer diarrhœa will, perhaps, seldom occur, and sterilisation will be then unnecessary.

It may afterwards be affected in the house by unclean vessels and utensils, places of storage, and surrounding unsanitary conditions.

A Sanitary Order, which is worthy of notice, has recently been made by the Board of Health in Buffalo, N.Y., to the following effect :—

“That it shall be unlawful for any person or persons to use, or to engage in the sale of, any bottle, mechanism, or other device for the artificial feeding or nursing of infants or young children under 3 years of age, which has connected therewith a rubber tube, hose, or such contrivance.”

(To be continued).

ART. IV.—*Angina Pectoris*.^a By JOHN KNOTT, M.A., M.D., Ch.B., and Dip. Stat. Med. (Univ. Dubl.); M.R.C.P.I.; M.R.I.A.; Fellow of the Royal Academy of Medicine in Ireland; &c.

(Continued from Vol. ciii., page 475.)

WHAT the internal conditions are which determine the external manifestation of symptoms connoted by the term *angina pectoris* is a query which has proved a striking specimen of a pathological *pons asinorum*. The following list of views have been advocated by various authorities:—Dr. Heberden himself attributed it to spasm, which he did not, however, quite definitely locate; he seems to have looked upon the characteristic pain as a “cramp”—somewhere. Dr. Macbride, of Dublin, whose case I have already quoted, located the spasm in the muscular substance of the heart. In this he was followed by Dr. Latham. The famous apostle of vaccination, Dr. Edward Jenner, was the first to advance the view that the symptoms were dependent on the existence of calcification of the coronary arteries; and this idea was further expanded by Sir Everard Home, who explained the pain by the pressure of the cardiac nerves against such calcified arterial tubes—during spasm of the muscular tissue. Desportes made it a neuralgia of the pneumogastric, Laennec of the sympathetic, Bouillaud of the phrenic, Jolly of the intercostal nerves, Piorry of the brachial (and some thoracic) nerves, Romberg of the cardiac plexus. Bamberger, with his characteristic German super-refinement of nomenclature, made it a *hyperkinesis with hyperæsthesia* of this plexus. Dr. Erasmus Darwin attributed it to spasm of the diaphragm, and Butter regarded the condition as symptomatic of diaphragmatic gout—a view in which he was followed by MacQueen, Johnston, and Blackall. Rougnon, of Besançon, attributed all the phenomena to the results of ossification of the costal cartilages. Virchow ascribed them to embolic plugging of the coronary arteries.

The most important evidence of any has, to my mind,

^a Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, Friday, April 9, 1897.

been furnished by Lancereaux and Peter, who, in several cases, reported distinct evidence of neuritis in the nerves of the cardiac plexus. This would, I think, satisfactorily account for the pain; and the irritative reflex inhibition, which might be a consequence of the involvement of the branches of the pneumogastric engaged in that plexus, would account for the sudden death which so often marks the period of this painful affection.

In the face of the varying conditions which have been found on examination of the bodies of persons who have died with the symptoms of angina pectoris, it is somewhat curious to find this condition defined as follows by the writer on the subject in the "Twentieth Century Practice of Medicine":—"Angina pectoris . . . is an affection of the heart characterised by paroxysms of agonising pain of sudden occurrence which irradiate usually to the shoulder and left arm, attended with an awful sense of impending death, *caused by sclerosis of the coronary arteries* at or about the aortic orifice." On the next page but one we read: "As certain cases, even fatal, have been found without discoverable anatomical lesion . . . "; and later on: "Tacchi reports the following lesions observed in 70 cases: lesion of the coronary arteries, alone or accompanied with other lesions of the heart or great vessels, 38 times; insufficiency of the aortic sigmoids, 12 times; aneurysm of the arch of the aorta, 5 times; fatty degeneration of the heart, 4 times; hypertrophy and dilatation, 4 times; pericarditis, 3 times; suppuration in the mediastinum, 1 time; negative results, 3 times." It requires no very special knowledge of either logic or medicine to be able to see that a chain of 70 links, of which three essential ones have been subjected to a process of instantaneous evaporation, has ceased to function as a bond of union between a fact and a theory.

That the great majority of cases of angina pectoris are accompanied by structural changes in the heart or aorta, or both, is a necessary conclusion from the great bulk of the evidence which has up to the present been collected on the subject. Of 19 cases tabulated by Dr. Ogle in a very able communication to the Pathological Society of London,

12 presented calcification of the coronary arteries; 12, fatty degeneration of the cardiac muscle; 10, atheroma of the aorta; and 6, valvular disease of pronounced character.

A close approximation to the pathological explanation of angina pectoris was made by Wall, whose communication to Heberden on the subject was, like the letter from the "Unknown," elicited by the publication of his original description. Both letters were read at the same meeting of the College of Physicians; and that of Wall contains the first account of a *post-mortem* examination of a patient who succumbed in a paroxysm, which, so far as I know, followed Heberden's baptism of the symptom-group. This man "died after having struggled in the fit about two hours," and "the heart appeared of an uncommon size, and was covered with a great quantity of fat; the pericardium contained not less than a pint of fluid . . . ; no part appeared diseased till we opened the left ventricle; and there, the semilunar valves, placed at the origin of the aorta, were found to be perfectly ossified. They did not, as usual, lie flat upon the divided orifice of the vessel; but stood erect, and appeared to be immovable. They were entirely osseous through their whole substance . . . ; the aorta was at its curvature considerably enlarged; and for near an inch from the heart was in part ossified; there being several bony scales or laminæ in it, but not connected with one another." On this condition he makes a series of interesting remarks, of which the following forms the concluding paragraph:—"It is possible that this induration of the semilunar valves may not be always the cause of this disease; though it seems not improbable that some malformation in the heart or vessels, immediately proceeding from it, may be so. Indeed, when we consider how frequently such indurations in the valves of the heart have been found; that the disease in question does not come on till a person is advanced in years, and consequently till a rigidity in every part naturally comes on; we shall, I think, be inclined to imagine that a præternatural induration of the parts necessary to the circulation through the heart may be the predisponent, if not the efficient cause of this disorder."

To the great Edward Jenner, the philanthropic apostle of vaccination, is attributable the credit—if, indeed, any credit really exists—of having tried to explain the symptoms by the presence of disease of the walls of the coronary arteries. This suggestion is contained in a very interesting (and otherwise remarkable) letter—also communicated to Dr. Heberden—on the case of his revered friend and former teacher, John Hunter, whom he had seen (in 1776) after a second attack of angina pectoris. The intrinsic interest of this letter makes it well worth reading at the present day, even apart from the passing inspiration which every true lover of medicine must feel from the association of the great names connected with it.

“When you are acquainted with my motives, I presume you will pardon the liberty I take in addressing you. I am prompted to it from a knowledge of the mutual regard that subsists between you and my worthy friend, Mr. Hunter. When I had the pleasure of seeing him at Bath last autumn, I thought he was affected with many symptoms of the angina pectoris. The dissections (as far as I have seen) of those who have died of it throw but little light upon the subject. Though in the course of my practice I have seen many fall victims to this dreadful disease, yet I have only had two opportunities of an examination after death. In the first of these I found no material disease of the heart, except that the coronary artery appeared thickened.

“As no notice had been taken of such a circumstance by anybody who had written on the subject, I concluded that we must still seek for other causes as productive of the disease; but about three weeks ago Mr. Paytherus, a surgeon at Ross, in Herefordshire, desired me to examine with him the heart of a person who had died of the angina pectoris a few days before. Here we found the same appearance of the arteries as in the former case. But what I had taken to be an ossification of the vessel itself, Mr. P. discovered to be a kind of firm, fleshy tube, formed within the vessel, with a considerable quantity of ossific matter disposed irregularly through it. This tube did not appear to have any vascular connection with the coats of

the artery, but seemed to lie merely in simple contact with it.

“As the heart, I believe, in every subject that has died of the angina pectoris, has been found extremely loaded with fat, and as these vessels lie quite concealed in that substance, is it possible this appearance may have been overlooked? The importance of the coronaries, and how much the heart must suffer from their not being able duly to perform their functions (we cannot be surprised at the painful spasms), is a subject I need not enlarge upon, therefore shall just remark that it is possible that all the symptoms may arise from this one circumstance.

“As I frequently write to Mr. H., I have been some time in hesitation respecting the propriety of communicating the matter to him, and should be exceedingly thankful to you, sir, for your advice upon the subject. Should it be admitted that this is the cause of the disease, I fear the medical world may seek in vain for a remedy, and I am fearful (if Mr. Hunter should admit this to be the cause of the disease) that it may deprive him of the hopes of a recovery.”

And in another letter Jenner says—“Soon after Mr. Paytherus met with a case. Previous to our examination of the body I offered him a wager that we should find the coronary arteries ossified. This, however, proved not to be exactly true; but the coats of the arteries were hard. . . . At this time my valued friend, Mr. John Hunter, began to have the symptoms of angina pectoris too strongly marked upon him; and this circumstance prevented my publication of my ideas on the subject, as it must have brought on an unpleasant conference between Mr. Hunter and me.” And although neither Clive nor Everard Home would condescend to adopt his views at first, we are told that—“When, however, Mr. Hunter died, Mr. Home very candidly wrote to me, immediately after the dissection, to tell me I was right.”

In the year (1775) before Jenner had communicated his letter to Heberden, Dr. Fothergill had been treating a victim of angina pectoris, and “in the evening, in a sudden and violent transport of anger, he fell down and expired

immediately." A *post-mortem* examination was made "by that very skilful and accurate anatomist, John Hunter, F.R.S.;" and "the two coronary arteries, from their origin to many of their ramifications upon the heart, were become a piece of bone."

In his post-graduate lectures of last year Professor Osler, of the Johns Hopkins University, has given an excellent summary of the present state of our knowledge of the morbid anatomy of angina pectoris. The great authority on the statistics of this subject is Huchard. "In a supplementary chapter to his work you will find a summary of 145 autopsies in cases of angina, gathered from the literature. In 17 cases there was mention only of a lesion of the coronaries without further specification; of 128 there were 68 with lesions of both coronary arteries, 37 of the left vessel, 15 of the right, and in 12 the seat of the lesion was not stated. In the 128 cases obliteration or stenosis of the vessels had occurred, and of these in 121 there was atheromatous narrowing or thrombosis, in 5 embolism, and in 2 compression. Fatal cases are on record in which the coronary arteries have been found normal; most of these are instances of adherent pericardium or valvular disease." It is hardly necessary to dwell further on the still unsatisfactory state of our knowledge of the morbid anatomy of a very important condition.

The pain—the urgent symptom—in angina pectoris has not, to my mind at least, been ever quite satisfactorily explained. The old idea, that it was due to cramp of the cardiac muscle, may account for that portion which is localised in the præcordial area, and has been of recent years advocated with characteristic argumentative power and lucidity of expression by Dr. Goodhart, of Guy's Hospital. But this cannot account for the central focus of mid-sternal pain, which I have always observed to be the most severe, and which was so in the experience of Heberden himself. Wall, whose paper I have already quoted, and who was one of the earliest followers of Heberden, in contributing to the literature of this subject, attempted to account for the humeral pain, which is generally so prominent a characteristic of a paroxysm of

angina. "It may be difficult to account satisfactorily for the symptom above taken notice of, when the pectoral muscle is so particularly affected; but this appears to be merely spasmodic, and to arise from an irritation on the nerves of the thorax and heart. Perhaps it may throw some light on this affair, to consider that the *nervi intercostales*, or *sympathetici*, distribute many branches to the heart, *arteria pulmonalis*, and aorta; the other branches of the same nerves surround the subclavian arteries and veins, and communicate with the *cervicales*, which latter terminate at the insertion of the deltoid muscle into the *os humeri*, which is precisely the place affected by the spasm already mentioned."

Erasmus Darwin, in his description of the anginal paroxysm, observes that—"A pain in the arms, about the insertion of the pectoral muscle, generally attends, and a desire of resting by hanging on a door or a branch of a tree by the arms is sometimes observed." His theory of the phenomenon, which he puts forward elsewhere, is as follows:—"As a principal branch of the fourth cervical nerve of the left side, after having joined a branch of the third and of the second cervical nerves, descending between the subclavian vein and artery, is received in a groove formed for it in the pericardium, and is obliged to make a considerable turn outwards to go over the prominent part of it, where the point of the heart is lodged, in its course to the diaphragm; and as the phrenic nerve of the right side has a straight course to the diaphragm, and as many other considerable branches of this fourth pair of cervical nerves are spread on the arms, does not a pain in the left arm distinguish a disease of the pericardium, as in the angina pectoris, or in the dropsy of the pericardium? and does not a pain or weakness in both arms distinguish the dropsy of the thorax?"

(To be continued.)

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A System of Dental Surgery. By the late SIR JOHN TOMES, F.R.S. Revised and enlarged by CHARLES S. TOMES, M.A., F.R.S. London: J. & A. Churchill. Fourth Edition. 1897. 8vo. Pp. 717.

TEN years have now elapsed since the issue of the third edition of this well-known dental classic, and the appearance of a fourth will, we have no doubt, be hailed with satisfaction throughout the dental world. Unfortunately, however, that decade has seen pass away the distinguished original author of this work, Sir John Tomes—a man who did for the dental profession more than seemed possible for any one individual to accomplish. His son, Mr. Charles Tomes, now brings forward this edition, much of the original text remaining intact.

The development of the jaws and teeth, normal and abnormal dentition, constitute the subject-matter of the first three sections, in which those familiar with the book will not find much change made, excepting the introduction of a useful diagram at the end of the second of these sections, illustrating the stages of development of the individual permanent teeth at various ages. Next follows a relatively exhaustive chapter upon dental irregularities, the treatment of which is gone into with, perhaps, not quite such fulness as one might expect, but then Mr. Tomes states that he wishes merely “to retain such points of manipulative detail as involve or illustrate general principles.”

Structural defects in teeth are then brought before the reader's notice; and here are summarised the results obtained by the modern researches of the reviser and Dr. Black. Some excellent micro-photographs find a place here, as in the chapter which follows upon dental caries. The treatment of the latter disease is then considered at some length,

the theory as to its chemico-parasitic origin being now well recognised, while a useful addition is made in the shape of some formulæ for antiseptic mouth-washes. Treatment of exposed pulp receives a large amount of attention, and, we would say, deservedly so, because, as is pointed out in this edition, the conservative treatment of such cases has of late years come to assume a more hopeful aspect. Here, again, very beautiful micro-photographs considerably enhance the context. A separate notice has been accorded to the various antiseptics of use in dentistry, and perusal of the same will teach much of their respective merits and demerits. Alveolar periostitis, diseases of the antrum of Highmore, and various morbid conditions of the teeth themselves—exostosis, necrosis, erosion, &c.—receive attention next. Here, as elsewhere, much is told in a comparatively brief space and with clearness. Touching upon anæsthesia, a warning is issued as to the grave risks attending the use of chloroform in ordinary dental operations, which will doubtless be endorsed by most dental practitioners.

The chapter upon odontalgia and neuralgia is full of instructive facts, and would well repay study on the part of medical men interested in the latter distressing series of symptoms.

The reflex affections due to dental irritation are next given a place, and in discussing these it is evident that much forethought and study have been expended. In the remaining pages the more surgical aspects of dentistry are tabulated—odontomes, cysts, hypertrophies of the jaw, and inflammations occurring within the oral cavity—while methods of both diagnosis and treatment are discussed.

We are glad to see the names of two Dublin practitioners finding places in the book—that of Mr. W. B. Pearsall, in connection with the so-called oblique rooted molar described by him, and Dr. A. W. Baker, in reference to an excerpt from an article in one of the journals by him, relating to success met in treating roots with corrosive sublimate without extirpation of the pulp.

To those familiar with this work, the form in which it is now published may seem a little strange, the edition at hand being less bulky while slightly larger than those preceding

it—to our mind a change for the better. The printing, binding, and general details of the work leave nothing to be desired, while the photographs before referred to are excellently reproduced. The book has our best wishes, and we believe it still holds that position which it has held in the past—*par excellence* the manual for use among students and practitioners of dental surgery.

Saint Thomas's Hospital Reports. New Series. Edited by DR. T. D. ACLAND and MR. BERNARD PITTS. Volume XXIV. London: J. & A. Churchill. 1897.

NOTHING more forcibly tells the great part medicine plays in the unceasing contest against pain, mental and physical, than the Reports of our London hospitals. To realise the beneficent labours of medicine we have only to imagine the immense multitude of pain-stricken individuals which fill our hospitals if left without medical aid.

The Report before us tells that in St. Thomas's Hospital during 1895 there were 3,365 surgical cases treated; of these 2,358 were cured and 590 relieved. Of medical cases 1,916 were treated; of these 892 were cured and 566 were relieved. But this does not show the whole of the work done by the hospital, for there are the special departments in which a large amount of good work was done. In all these statistics—and they are numerous and carefully prepared—there is one defect. We hear nothing on the very important question of anæsthetics; it would not be difficult to mark after each operation what anæsthetic agent was used and why it was selected. The interests of the medical profession require such information, and until it is furnished the report cannot be considered to be wholly satisfactory.

Of the contributions to the number—all of which are of a high standard of excellence—we desire to draw attention to two—"On the Occurrence of Relapse in the Specific Fevers," by Dr. Caiger, which is pregnant with good, and its substance is pretty certain to be embodied in future text-books. It is a paper from a practical physician—one which should be read by all practitioners, and one which

plainly proves that a physician may be deeply read in medicine and withal a practical man at the bedside.

The second paper is a report on localised softening of the medulla following on thrombosis of the left vertebral artery. It is a good specimen of a purely clinical paper, evidencing how much the symptoms may tell to the trained observer. As long as our great London hospitals continue to produce Reports such as this of Saint Thomas's we can have no dread for the future of British medicine. The student of medicine can have no better study for practical purposes than these Reports, where he finds thousands of cases classified and arranged for his convenience, and the clinical and other notes given with a fulness which enables him to pass under review the workings of a great medical school and learn the methods of treatment which find most favour with the leaders of the medical profession.

A Short Practice of Midwifery. By HENRY JELLETT, B.A., M.D. Dublin, &c.; Assistant Master, Rotunda Hospital. London: J. & A. Churchill. 1897. Pp. 311.

A PLEASING task is in store for the reviewer of this book, which reflects much credit on the author, who has found time to write it in the midst of the many and responsible duties connected with his position in the Rotunda Hospital.

For the first time in many years the maternity methods of the Rotunda Hospital, which have gradually been evolved and have become crystallised under the successive Master-ships of Drs. Atthill, Macan, and Smyly, are given to us in a succinct form and by a writer whose position entitles his statements to be stamped with the Hospital seal. The opening sentences of this *Midwifery* are so important that we deem it necessary to reproduce them in the author's own words:—

"It is not an exaggeration to say that the most essential knowledge in midwifery is the knowledge of asepsis. A practitioner who knows nothing of the science and art of midwifery except that it is absolutely necessary that his hands and instruments be sterile will save more lives than the most accomplished obstetrician who does not practise asepsis."

This statement will be considered by many somewhat overdrawn, but nevertheless it serves to enforce at the very outstart the principle of surgical cleanliness which constitutes the keynote of the whole book.

The barriers which nature affords against germ invasion are well described, and there is a warning voice raised against meddlesome interference by means of douches, &c., with normal processes.

Chapter III. deals with the signs of pregnancy, and contains many valuable and but little known early indications of that condition. In writing of normal labour the author has really omitted nothing of importance. Abdominal palpation receives the prominence it deserves. The Rotunda method for supporting the perinæum is clearly described; and the conduction of the 3rd stage is written about in a lucid manner. These latter sections will no doubt be taken note of, as the plans described have been those practised for over half a century in the Dublin School.

In dealing with accidental hæmorrhage, Dr. Jellett, following the teaching of his hospital, advocates as treatment tight vaginal plugging; and we only trust that his book may have the effect of causing this plan to be more generally adopted.

Skutsch's methods for obtaining accurate internal measurements of the pelvis, together with a good description of his pelvimeter, are not forgotten; and the prominence the subject receives in the book before us must be fraught with good results. Considering the modest size of the book our readers will not be surprised to hear that theoretical considerations are in a great measure avoided. It nevertheless teems with information of a practical kind, and this is conveyed to the reader in the form more of clinical lectures than in that which we are accustomed to find in works of this sort.

Puerperal sepsis is one of the many good chapters of this manual, and the subject is dealt with in a way that ought to enable the student to recognise and deal with the disease wherever and whenever he encounters it.

The Appendix consists of carefully drawn up tables showing the nature and number of cases treated in the

Rotunda Hospital during the Mastership of Dr. W. J. Smyly. The name of the late Master is alluded to in a grateful manner in Dr. Jellett's preface, and a short preface from Dr. Smyly's own pen graces the first pages of the book.

It will cause us much surprise if the first edition of this little work is not soon exhausted, and when the second appears we trust that the author's time will enable him to add to and enlarge the work he has already with so much success taken in hands.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections.

Edited and annotated by J. J. PRINGLE, M.B., F.R.C.P.

Part IX. London: The Rebman Publishing Company. 1897.

THE ninth fasciculus of this beautiful Atlas contains four plates with their accompanying letterpress. The subjects illustrated are—squamous eczema (keratodermic eczema), described by M. L. Jacquet; pustular scabies, by Henri Feulard, whose life was so tragically terminated in the disastrous fire at the Charity Bazaar, Paris; disseminated lupus-pernio, affecting the ears, upper extremities, and centre of the face, with tuberculous synovitis, by Dr. Ernest Besnier; and gummatous tuberculous lymphangitis, secondary to tuberculous dactylitis, by George Thibierge.

Dr. Pringle has again done his part of the work well, and we offer him our felicitations.

Diphtheria and Antitoxin. By NESTOR TIRARD, M.D. Lond., F.R.C.P.; Professor of Materia Medica and Therapeutics at King's College, and Physician to King's College Hospital; Senior Physician to the Evelina Hospital for Sick Children. London: Longmans, Green & Co. 1897. Pp. 141.

WE have read this book with much pleasure. It is a work produced by the experience of a fair-minded and observant physician. Thus, Dr. Tirard draws largely upon his own experience of diphtheria, and illustrates his points by notes of cases taken from his wards. He does not appear to be anxious to develop or maintain any special theory—we

had almost, from our experience of other works, written *fad*; but his aim is to describe diphtheria as the disease has presented itself to him, and to record the results he has obtained from the use of antitoxin. At the same time we must say that the book is incomplete as a monograph on diphtheria, inasmuch as it treats the disease solely from a clinical point of view.

On the subject of the causation and spread of diphtheria, Dr. Tirard has not much to say that is new; he quotes extensively from Dr. (now Sir Richard) Thorne's well-known work on this subject. Chapter II. gives a good account of the symptoms of diphtheria, into which, as indeed is the case throughout the work, notes of many illustrative cases and temperature charts are introduced. Dr. Tirard is inclined to attach considerable weight to the early loss of knee-jerk as a diagnostic help. Then the complications and the prognosis of the disease are discussed. Dr. Tirard is emphatic on the slight importance of albuminuria in diphtheria, both from the standpoint of diagnosis and from that of prognosis.

The description of diphtheritic paralysis is careful, but seems to us to be somewhat disconnected, so that it is not easy to obtain a clear description of the ordinary features of the malady.

With regard to treatment, Dr. Tirard has strong belief in the merits of antitoxic serum, which, he says in the preface, seems to have robbed diphtheria of most of its terror. His practice is to give a dose corresponding to 1,000 units of immunity; this dose is usually sufficient. If needed, it is repeated two or three times, commonly at intervals of 24 hours. He has never observed any ill effects from its use. He urges, rightly as we think, that in every doubtful or suspected case the antitoxin be injected without waiting for bacteriological examination to settle the diagnosis.

As regards tracheotomy and intubation in laryngeal diphtheria, the author seems rather to prefer tracheotomy when the question is considered apart from the use of antitoxin; but his feeling is that if intubation is performed early and antitoxic serum injected at the same time there

is less likelihood of the membrane extending down the trachea, and the portions of membrane already formed will soon soften and become detached. Cases in which intubation has been done require just as careful attention and nursing as do those in which tracheotomy has been performed.

As we have before said Dr. Tirard treats diphtheria exclusively from the clinical standpoint. We think it a pity that in a work otherwise so complete there is no mention even of the pathology and morbid anatomy of the disease. An account of Löffler's bacillus, and of the *post-mortem* appearances in fatal cases, would not have been out of place. We are not even able to find that the cause of the paralysis is given—neuritis does not seem to be mentioned.

However, from a purely clinical point of view, the book is well written ; and as such we recommend it.

Gout and Goutiness, and their Treatment. By WILLIAM EWART, M.D. Cantab., F.R.C.P., &c.; Physician to St. George's Hospital and to the Belgrave Hospital for Children; formerly Assistant Physician and Pathologist to the Brompton Hospital for Consumption. London: Baillière, Tindall & Cox. 1896. Pp. 589.

SOME years ago a work appeared, entitled "Gout in its Protean Aspects," the word "protean" referring to the manifold phenomena caused by gout in those affected by the disease. The work before us might well be called "Gout in its Protean Aspects," but in this case the adjective would refer to the multitude of views, theories, and speculations as to gout that have been put forward by writers of various ages and different countries. Dr. Ewart's intention seems to have been to reconsider our principles of treatment; and to do this the more completely he has discussed the subject of gout in its entirety, giving an account of the views that have been entertained by others as well as his own personal opinions. From the number and the frequent divergence of the opinions held on the subject, it follows that a great portion of this work

consists of *résumés* of various writers' opinions. We regret that Dr. Ewart has not more fully stated his own views, and given us a more connected and uniform work on the subject. All the views mentioned cannot be correct; yet we often find it difficult to distinguish those which the writer (or, shall we say, the compiler?) personally approves from those which do not commend themselves to him.

The work is divided into ten sections. In the earlier divisions the Theories of Gout, its Chemistry, Pathology, and Morbid Anatomy are treated of. The works of Sir W. Roberts and Sir A. Garrod are very largely referred to; but Dr. Ewart's industry is proved by the large number of writers, both British and foreign, whom he quotes.

The description of the clinical symptoms of gout is careful—indeed, minutely so. To our mind, it suffers from its minuteness and excess of details. We have a laborious and complete account of all the symptoms observed by various physicians; but we fail to perceive a clear and definite picture of the ailments from which Dr. Ewart's own patients have suffered. At the same time, this mass of details is in itself very valuable for purposes of reference. If we want to know, for example, what Rendu thinks of acene in gouty subjects, or what Sir Dyce Duckworth writes about subcutaneous nodules, or what Guéneau de Mussy's views on gouty tonsillitis are, we have only to refer to Dr. Ewart's work.

The section on treatment is very full, occupying over 250 pages. Its character resembles that of the other sections of this work—*i.e.*, it contains the views of a very large number of physicians. What we miss in many places is Dr. Ewart's own mode of treatment. He often gives us our choice of remedies, and leaves us there. Thus, in the chapter on the treatment of gastric catarrh we read—“Gastric and intestinal antiseptics are of primary importance. For this we have a choice of new remedies, including β -naphthol, benzo-naphthal, salol, and resorcine. The older preparations, such as sodium hyposulphite, sulphur (in tabloids), creosote (in capsules), and mercurial preparations (in pill), will often prove most effectual.” Surely Dr. Ewart's experience must have led him to favour cer-

tain of these drugs more than the others; if so, however, we are not entrusted with the secret.

The last sections of the book treat of baths and medicinal waters (including those of North America and New Zealand), and of the treatment, dietetic and medicinal, of chronic gout.

This work has many good points: it contains a vast deal of information on the subject of Gout and Goutiness; it will often be found useful as a book of reference, but still to our mind it falls short of being a really great book on the subject.

Burdett's Hospitals and Charities, 1897: being the Year-book of Philanthropy. By HENRY C. BURDETT. London: The Scientific Press (Limited). 8vo. Pp. 918.

THE most interesting chapters in the volume before us will probably be the first, second, and third. The first gives an instructive summary of the beneficent reign of the Queen, particularly in relation to public charities and the development of hospital work in the past sixty years. The second chapter describes the Prince of Wales's Hospital Fund for London, and gives a comprehensive alternative scheme, showing what might be done in London if £150,000 a year could be raised. An account of Hospital Construction in 1896 is given in chapter III., with free criticisms by the author.

The work is brought out on the usual lines, and contains a storehouse of authentic information on all points connected with hospital management and finance.

The Royal Navy. By a LIEUTENANT, R.N. With a preface by Admiral of the Fleet, SIR J. E. COMMERCIAL, V.C., G.C.B., R.N. London: Swan Sonnenschein & Co. 1897. Pp. 126.

APPROPRIATELY published almost on the eve of the Queen's Diamond Jubilee celebration, this attractive history and description of the Royal Navy cannot fail to become a popular book. It is cheap, is beautifully printed on

excellent paper, and is profusely and artistically illustrated with photographs and wood-engravings.

The scope of the work will best be understood from the table of contents. There are separate chapters on the naval history of the British Empire from its dawn to the present day, on naval administration, on the different classes of ships in the navy, on armament, torpedoes, &c., on the *personnel* of the Royal Navy, and on commissioned ships, &c. The work concludes with a short but useful bibliography. At page 97 there is a brief account of the Medical Department of the Service.

For the financial year 1896-97 the number of the officers and men voted for the Royal Navy amounted to a grand total of 117,671. This includes coastguard and Royal Naval Reserve. Such is the first line of defence which guards the British Empire.

Archives of Skiagraphy. Edited by SYDNEY ROWLAND, B.A. Camb. London: The Rebman Publishing Company. No. 4. Vol. I. April, 1897.

THERE are six plates in this fourth fasciculus of the *Archives of Skiagraphy*. Plate XIX. illustrates two cases—one of advanced and permanent talipes plantaris and calcaneus of the left foot, the other of dislocation of the elbow six weeks after the injury. Plate XX. shows an example of multiple osteoma and a case of fracture of the radius and ulna, with dislocation of the radius backwards. Plate XXI. shows well the relation of parts in congenital dislocation of the left hip in a girl aged 7 years.

The remaining plates in the fourth number illustrate the applications of skiagraphy to zoology. The skiagrams are by Dr. R. Norris Wolfenden, B.A., M.D. Cantab.

Plate XXII. represents the skiagram of the common lobster (*Homarus vulgaris*), taken from above, and with an exposure of three minutes, using a ten-inch spark coil and Watson's new palladium tube. The edible crab (*Cancer pagurus*) is "skiagraphed" in Plate XXIII., and so is the hermit crab (*Eupagurus Bernhardus*) in Plate XXIV. A third section of this plate shows a series of ray records for

the cinematograph, taken from the frog's leg by Dr. John Macintyre, of Glasgow. On the whole, these zoological skiagrams are disappointing, while the pathological appearances are well brought out in the clinical series.

The Edinburgh Medical Journal. Edited by G. A. GIBSON, M.D., F.R.C.P. Ed. New Series. Vol. I. Edinburgh and London: Young J. Pentland. 1897. 8vo. Pp. 692.

ALTHOUGH the *Edinburgh Medical Journal* is on our exchange list, Mr. Pentland has courteously presented us with a bound copy of the first volume of the new series of the journal, which has been brought out under the editorship of Dr. George A. Gibson.

We heartily congratulate the Edinburgh school, the editor, and the publisher alike, upon the appearance of the volume, and upon the high-class material which its pages contain.

Writing in Dublin, we are pleased to find an excellent and thoughtful paper on the course of the taste fibres from the tongue to the brain, from the pen of our gifted young fellow-countryman, Dr. A. Francis Dixon, who has lately left his native city to take up professorial work at the University College of South Wales and Monmouthshire, Cardiff.

Antiseptic Principles for Nurses. By C. E. RICHMOND, F.R.C.S.; Honorary Surgeon, Ancoats Hospital, Manchester; Honorary Surgeon, Warrington Infirmary. London: J. & A. Churchill. 1897. 8vo. Pp. 47.

THE reason *why* is here considered in a very satisfactory manner, and much useful information has been condensed for the use of nurses. Microscopic cleanliness and the reasons for it are clearly set forth, the germ theory of disease being explained with special reference to morbid influences acting on wounds, antiseptic treatment and aseptic dressings being enjoined in every case, to render innocuous and to prevent the entrance of the harmful

microbes floating around us. A chapter is devoted to the consideration of these organisms, and their dissemination, showing the wonderful rapidity of their multiplication in favourable surroundings, and the absolute necessity there is for combating their inroads. The new oxygen treatment of wounds is hinted at in the last chapter.

These pages will prove valuable as a handy text-book to the busy nurse and to the many who wish for more light, and who are not within reach of the advanced lectures now given to nurses in all our large centres by physicians who are eminent as specialists in the several subjects upon which they lecture.

NEW ANTISEPTIC SOAP.

DR. CHARLES T. M'CLINTOCK has succeeded in making (*Medical News*, New York, April 17, 1897) a strong antiseptic soap, which, when in use, does not precipitate the antiseptic. Dr. M'Clintock uses the double salt of mercury and potassium iodide in from $\frac{1}{2}$ to 2 per cent. strength. He comes to the following conclusions:—(1) In proportion to the amount of antiseptic contained this soap is at least five times as strong as any known germicide. A one per cent. solution of the soap, 1-500 of mercuric iodide, is at least equal to 1-1000 mercuric chloride. (2) As it would ordinarily be used, it is at least as strong as any germicide in common use; *i.e.*, he believes that if a wet cake be rubbed over the hands the layer of soap next the skin will be at least a one per cent. solution, and, as the tables show, this is at least as strong as 1-1000 mercuric chloride. (3) It does not coagulate albumens or attack nickeled or steel instruments. It does not seem to have any action on lead, and so will not injure waste pipes. (4) It will attack silver and aluminium instruments.

THE RÖNTGEN RAYS.

DR. JAMES SWAIN publishes (*Bristol Medico-Chirurgical Journal*, March, 1897) a paper on the effect of the Röntgen rays on calculi. It is illustrated by a good series of plates which show that the resistance to the passage of the rays is not always in direct ratio to the specific gravity. A case is appended in which a skiagram of a renal calculus was obtained in the living subject; in this case the calculus was "white" or "crystalline" oxalate of lime.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND.

THE Summer Meeting of this Society was held in Trinity College, Dublin, on June 10th and 11th, under the presidency of Prof. G. D. Thane, who was in the chair, and the following foreign guests were present:—Prof. Waldeyer, Berlin; Prof. His, Leipzig; Prof. Leboucq, Ghent; Prof. Disse, Marburg; Dr. Otis, Boston, U.S.A.; Prof. Spalteholtz, Leipzig; Dr. de Bruyne, Ghent; Dr. Frohse, Berlin; and Dr. Kæstner, Leipzig.

On June 10th, at 10 a.m., after the election of seven new members, the following communications were made:—

Dr. T. H. Bryce, Glasgow—"A pair of Negro Femora, the left showing a remarkable Development of the Popliteal Surface."

Prof. Spalteholtz, Leipzig—"Stereoscopical Photographs of the Arteries in the Human Skin."

Prof. Leboucq, Ghent—"The Ossification of the Terminal Phalanges of the Fingers in relation with Hyperphalangy."

Prof. Birmingham, Dublin—"Models of the Abdominal Viscera."

Dr. Kæstner, Leipzig—"Specimens of Malformed Chick Embryos."

Prof. Sir Wm. Turner, Edinburgh—"X-Ray Photographs of Injections of the Arteries of the Limbs and Kidneys."

Dr. Otis, Boston, U.S.A.—"On the Structure of the Rectum."

Prof. A. Macalister, Cambridge—"Study of Australian Brains."

Mr. J. Cantlie, London—"The Position of the Gall Bladder."

Prof. R. Howden, Durham—"A case of marked Distension of the Colon."

Prof. Redfern, Belfast—"The Development and Nutrition of Bone and Cartilage."

In the afternoon, at 2 30, the following communications were made:—

Prof. Windle, Birmingham, and Mr. Parsons, London—"The Nomenclature of Comparative Myology."

Prof. Anderson, London—"The Peritoneal Relations of the Sigmoid Flexure of the Colon."

Prof. Disse, Marburg—"The Development of the Olfactory Nerve in Birds."

Prof. Spalteholtz, Leipzig—"Reticulated Tissue in different organs."

Prof. Dixon, Cardiff—"Development of the Eye-muscle Nerves in Mammals."

Prof. Cunningham, Dublin—"The Development of the Fissure of Rolando and the Calcarine Fissure."

On Thursday evening a banquet was given by the President of the Royal Academy of Medicine in Ireland—Dr. James Little—in the Royal College of Physicians of Ireland.

On Friday, June 11th, a breakfast was given by Profs. Cunningham and Birmingham in the Gardens of the Royal Zoological Society of Ireland, in the Phoenix Park. Afterwards the following communications were made:—

Prof. v. Bardeleben, Jena, and Dr. Frohse, Berlin—"The Finer Ramifications of Nerve-filaments supplying Muscle."

Dr. C. J. Patten, Dublin—(1.) "Two Curious Modifications of the Lower Jaw." (2.) "Cervical Vertebra in which the Laminæ had not fused."

Prof. Cunningham, Dublin—"Models and Specimens of the Kidneys."

Dr. Elliot Smith, Sydney—"The Morphology of the Fornix and Margin of the Cerebral Cortex."

Dr. W. Smyth, Belfast—"Absence of Pectoralis Major in a Living Boy."

Dr. de Bruyne, Ghent—"Adaptation fonctionnelle de la Phagocytose."

Prof. Waldeyer, Berlin—"Topographical Anatomy of the Pelvic Wall, with special reference to the position of the Ovary."

Mr. Booth Pearsall, Dublin—"On the Linear Determination of the Human Tooth Form."

Dr. W. S. Haughton—"X-Ray Photography applied to Anatomical Investigation."

Prof. Cunningham, Dublin—"Note on Cape Hunting Dogs."

Prof. Windle, Birmingham—"Priestly Smith's Formol Method of Mounting Eye Specimens."

Prof. Howden, Durham—"A case of Bifid Scrotum."

In the evening a dinner was given by the Senior Fellows of Trinity College.

On Saturday, June 12th, a party of twenty-four went to the Lakes of Killarney, in the Co. Kerry, under the leadership of Dr. W. S. Haughton, the Local Honorary Secretary of the meeting.

Antitoxin in the Treatment of Tetanus.^a *Two Cases translated from Gaceta Médica de Costa Rica.* By GEORGE FOY, F.R.C.S.I.; M.D. (Hon. Causâ) U. C. Va.; Hon. Fellow of the Southern Surgical and Gynecological Association, U.S.A.; Surgeon to the Whitworth Hospital, Drumcondra.

THE first case, Dr. Cercignani's, was that of Maria Giovannelli who, whilst cutting bread, on the 18th of December, 1895; wounded her left hand. To stop the bleeding some spider's webs and a firm bandage were applied. Four days afterwards she complained of severe lancinating pains in the wound, and a doctor was called in.

On removing the bandage brisk arterial bleeding commenced, and an attempt to catch and secure the bleeding vessels failed, owing to the brittleness of the arterial walls, which broke down under the forceps. Ligature of the radial was now proposed and accepted. The artery was tied, and the wound in the hand was afterwards thoroughly washed with a solution of corrosive sublimate, and the sides brought together with a deep suture, the part being freely dusted with iodoform.

Four days afterwards—that is to say, the eighth day after the injury—the wound presented nothing abnormal, except a slight point of suppuration by the side of the suture, but the patient felt a little pain in the left arm and some difficulty in opening her mouth. The doctor removed the suture, washed the wound with corrosive sublimate solution, and told the family that the case was probably one of tetanus. The day following the patient was fairly well, but on the morning following the doctor was told that she was worse, and could not open her mouth.

On arrival the doctor had no difficulty in recognising a well-marked case of tetanus. The temperature in the arm-pit was 103.5° , with complete trismus, difficulty of breathing, difficulty of swallowing, and difficulty in speaking. She had opisthotonos and complete rigidity of the muscles of the neck and dorsal region, without power to move the head or trunk, and, lastly, violent convulsions, during which she screamed loudly.

Ordered absolute quiet, darkened the room, and gave clysters of chloral of 10 to 15 gramme doses, and hypodermics of morphia, and, at the same time, telegraphed to Professor Tizzoni for antitoxin.

On the following morning, the 28th of the month, the temperature in the arm-pit was 101° , and the patient complained of a pain,

^a Copied from Fernando Iglesia's article in *Riforma Medica*.

extending from the thorax to the pelvis, which encircled the body.

It is worthy of note that the woman was near the full term of her pregnancy, and already her labour was commenced and she had no power to complete it; happily the case ended favourably, and a healthy child was born, which gave no sign of any tetanoid trouble.

The day following the patient was much in the same condition, the temperature remaining steady. Early in the day Professor Tizzoni came from Bologna. Having examined the wound he washed it with a one in a thousand solution of corrosive sublimate, and afterwards with a one per cent. solution of nitrate of silver. He gave a hypodermic injection of 20 c.c. of anti-tetanic serum in the left side, and a similar hypodermic injection in the right side. The hypodermics were followed by a slight pruritus, and this was succeeded by an erythema, which lasted for a few hours. Contemporaneously with these injections he gave hypodermics of morphia, clysters of chloral; and for nutriment gave clysters of peptonised broth, milk, and eggs, for the patient was unable to swallow.

Following day, December 30th, the patient's condition unchanged; temperature, 100° – 102° ; hypodermics of the serum (10 c.c.) night and morning.

December 31st.—Hypodermics of antitoxin in gramme doses night and morning; temperature, 99.4° – 100° .

January 1st, 1896.—Hypodermics of a gramme of antitoxin night and morning; temperature, 99° – 100° .

January 2nd.—Gramme doses of the antitoxin hypodermically as before; temperature as day before; the patient better; convulsions not so frequent nor so violent; sweating freely.

No change from the 3rd to the 6th of the month.

January 7th.—Dose of antitoxin reduced to half a gramme twice daily; patient better; convulsions have diminished from seventy to thirty in the hour.

From the 8th to the 27th of January one gramme of antitoxin was injected; patient markedly better, and was able to eat a little; the convulsions have diminished from thirty to twelve in the hour.

After the 18th the dose of antitoxin was reduced 25 c.c., and daily the patient improved until the 1st of February, when she was declared to be completely cured.

The second case is that of Dr. Rabbitti, whose patient, Anibal Proldi, nineteen years old, received a wound from a musket on the dorsum of the left foot. The wound gradually cicatrised, until

the 2nd of March—he complained of no pain, and felt no inconvenience. This condition of affairs remained unchanged until the 20th of the month, on which day the man noticed a slight difficulty in opening his mouth, and complained of constipation and pain in his belly. On the 27th all the symptoms of tetanus were present. When questioned the man told that when wounded he covered the wound with snow, gathered close to a dung-hill, to ease the pain. The ordinary treatment of chloral and morphia was resorted to, and Professor Tizzoni was asked to send some antitoxin. On the 29th of March two grammes of antitoxin, in divided doses, were injected round the wound. Two hours afterwards the man complained of a sensation of warm liquid circulating in his foot, and of its escape as gas.

This sensation lasted an hour, and was followed by one quite as extraordinary; he complained of his leg feeling as if it would burst, and this bursting feeling gradually passed to the thigh, and finally rose to the belly and chest. He passed a restless night, being deeply agitated with subjective sensations. The 30th of March he suffered from dyspnœa and strong contractions of the abdominal muscles. By means of clysters the patient had two full stools; temperature, 101·4°.

March 31st.—Injected one gramme of antitoxin, after which all the nervous symptoms became intensified, the difficulty of respiration passing to the production of orthopnœa. The pulse became intermittent; a great sweat broke out, and the pupils became immovable; temperature, 102°.

April 1st.—The grave state of the patient caused an unfavourable prognosis.

April 2nd.—The spasm of the diaphragm slightly diminished in intensity; orthopnœa not so acute. Complains of spasms of the muscles of the left leg, and of a violent pain in the sole of the left foot, where, some fluctuation being detected, the part was incised, and a small quantity of pus was let out. The relief from pain was very marked, and the temperature fell.

April 3rd.—Patient suffers from difficulty of micturition and muscle spasm, conditions which disappeared on the discontinuance of the hypodermics of morphia. Sweating copiously; temperature normal.

April 4th.—Dyspnœa diminished, and the patient is able to sleep lying down.

April 5th.—Diminution of the trismus and contraction of the muscles of the neck; but the difficulty of micturition has returned. The neck of the bladder is strongly contracted, and catheterism is

impossible. After the application of warm poultices and rubbing with belladonna ointment the patient passed a great quantity of water.

From this date the patient made an uninterrupted recovery.

RAPID STERILISATION OF WATER.

BROMINE added to water will kill all the pathogenic germs in it in five minutes, and the addition then of ammonia will neutralise the bromine. Schumburg, who makes this announcement in the *Deutsche med. Woch.* of March 4, has tested the process 200 times with river water at Berlin, to which germs of all kinds had been added, including cholera and typhoid germs. He uses 0·2 c.c. of the following solution:—Water, 100; bromine, 20; potassium bromide, 20 for each litre, and then neutralises it with an equal amount of 9 per cent. ammonia. The water is then perfectly clear, the taste is scarcely altered at all and the amount of bromine salts remaining in it is so small—0·15 per litre—that they do not affect the taste nor health. Marsh and other water containing ammonia requires a little more bromine to counteract it. He recommends the process as rapid, effective and cheap for sterilising water for drinking in the army and on board ship, in unhealthy localities and for medical and surgical purposes.—*Jour. Am. Med. Assoc.*

NEW YORK DISPENSARIES.

DR. BROUNER, of New York, has reprinted from the *Medical Record* his paper on the use and abuse of the city dispensaries. The profession in New York is wakening up to the importance of the subject. Forty-four institutions “treated 707,058 patients (who made in all an average of less than three visits to each patient), for whom 1,039,632 prescriptions were filled, for which a fee ranging from 10 to 25 cents was charged in the vast majority of cases.” “In one of the so-called poor institutions I was told that on a conservative estimate at least forty per cent. of those treated were able to pay a doctor. Indeed, it is not a novel experience for one to meet at the theatre or out riding on a wheel the very patients who were too poor, forsooth, to pay a doctor, and hence availed themselves of dispensary treatment. In the clinic in which I am an assistant it is not an unusual thing for men to ask if their urethral or prostatic trouble would be aggravated by the use of a bicycle; indeed one patient had the temerity to ask me if horseback riding was likely to prove injurious! And so I might go on citing instances *ad infinitum*.”

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—JAMES LITTLE, M.D., F.R.C.P.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF SURGERY.

President—WILLIAM THOMSON, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, March 5, 1897.

The PRESIDENT in the Chair.

On Cases of Nephro-lithotomy and Nephrectomy.

MR. MYLES read a paper on this subject. Having given details of several cases of successful operations for removal of renal calculi, he drew attention to one case in which nephrotomy for renal abscess had been performed and the kidney explored with the finger, but no stone detected. Subsequently, the pyrexia persisting in spite of drainage, the kidney was removed through an incision in the linea semilunaris. On cutting the organ open it was found to contain a calculus about the size of a hazel-nut and to consist of a series of abscess cavities. One case mentioned was operated on from the loin for the purpose of fixing a floating kidney, but on exposure the kidney was found to be cystic and it was accordingly removed. Mr. Myles discussed the connection between the cystic character of the kidney and its mobility, inclining to the belief that the mobility was the cause of the cysts by intermittent blocking of the channel through kinking of the ureter. He advocated removal when the cystic condition was established, as it would be found impossible to fix the kidney owing to the strain placed on it by pressure from the viscera in the irregular surface projections. Mr. Myles then discussed the advisableness of needling the kidney for exploratory purposes from the loin as a substitute for lumbar or abdominal exploration. With a large number of abdominal illustrations, taken from sections of the frozen cadaver, and dissections of the kidney from behind in a subject with organs hardened *in situ*, Mr. Myles pointed out the difficulties and dangers

of the operation, and asked for an expression of opinion from the members on the subject.

In addition, Mr. Myles detailed his attempts to obtain Röntgen photographs of stone in the kidney, and showed the practicability of the idea by exhibiting a photo of a cadaver, in the kidney of which he had placed a large renal calculus. Mr. Myles pointed out the difficulties of diagnosis in surgical diseases of the kidneys, detailing one case in which he had opened what he believed to be an abscess due to appendicitis, but which proved to be due to a renal calculus which had ulcerated through the kidney and set up ulceration around it.

In another case the symptoms of stone and renal enlargement were simulated by a lumbar abscess due to caries of the spine. In discussing the operation of nephrectomy, Mr. Myles expressed himself in favour of the lumbar incision, this being enlarged if necessary by a vertical incision at its anterior extremity.

The PRESIDENT said he was sure that everyone present considered Mr. Myles' paper both interesting and important. With regard to the question of needling as an aid to diagnosis, he did not believe in sticking a needle into the loin in the hope of finding the kidney or of hitting a stone.

PROFESSOR BENNETT considered the question of diagnosis of renal calculus of prime importance. It was possible for a calculus to be present without giving rise to any symptoms. He had himself, a few years ago, recorded a case of a man who had died from ascites, and *post-mortem* examination disclosed a calculus in the kidney. He could attest that the patient had never had any symptoms whatsoever of renal calculus.

MR. BALL said that in experimenting with the X-rays one ought to be cautious in drawing conclusions as to the presence of a stone. From the photographs which Mr. Myles exhibited, it could be seen that some calculi gave photographs like those given by gall stones, which are very transparent. The skiagraph was of no use, he said, in cases of cholesterine calculi. Calculi containing a large quantity of lime or phosphate gave a good skiagraph; but lithic acid was almost as transparent as cholesterine. With reference to palpation as an aid to diagnosis, he considered that it could not be very much relied on. He mentioned a case in which there was a good deal of pus in the urine, but with no definite symptoms of stone. It was discovered that pus was coming from one ureter, and subsequently a considerable tumour was found on palpating the lumbar region. An incision was made, but efforts to detect a stone were fruitless. The man

improved in health, though suppuration continued. Subsequently the kidney was removed, and a stone of considerable size was discovered. Recovery was complete. He referred to another case in which it was thought that gonorrhœal inflammation had spread up the ureter to the kidney. The case became serious, and, on cutting down, the kidney was found to be of considerable size. He drained off a large quantity of pus, and his finger struck a large stone. Such cases, he said, showed the extreme difficulty of diagnosis of renal calculi.

MR. TOBIN thought that no definite rule could be drawn about the position of incision. He considered the anterior incision better if there was no pus in the urine and no rise of temperature. He had seen some very large tubercular kidneys removed through an anterior opening—so large, indeed, were the kidneys that some matter from them could not have failed to get into the peritoneal cavity.

SIR WILLIAM STOKES said that he had adopted the line of incision to which Mr. Myles objected. He had seen cases in which he thought that he (Mr. Myles) would have adopted the anterior incision also on account of the large size of the tumours. He considered Mr. Myles needlessly apprehensive of peritoneal troubles from the anterior opening. A more satisfactory view, he thought, could be obtained from the anterior opening. He considered the X-rays an important aid to the diagnosis of renal calculus, and they would probably be of much greater aid when brought to perfection. He agreed with the President in his remarks about exploration with the needle.

MR. M'ARDLE thought the X-rays of great value in the diagnosis of calculi. He had experimented with tubes somewhat different from the usual kind, and had found that cholesterine crystals were shown very clearly, so that the question of translucency was of no weight at all. With regard to needling, he had himself practised it as well as passing sutures through the kidney in his first operations on floating kidney, but he had now abandoned the practice as the results had been unfavourable. The question of the floating and cystic conditions of the kidney being present together was a very interesting one. He had formerly shown a cystic kidney with the ureter shaped liked the figure 8, and could not be uncoiled. There had been an intermittent discharge of pus for two years. This case bore out the statement that displacement of the kidney produces such changes as to bring about a cystic condition.

MR. R. LANE JOYNT said that from skiagraphy negative results were sometimes obtained. With reference to the case at present

in hospital to which Mr. Myles had referred, the shadows on the first plate, though definite, could not be recognised as any known objects. A second photograph showed the ilium, but not the spine, and was therefore rejected. A third photograph revealed the spinal column distinctly, but no calculus was evident. He therefore concluded that, at all events, an opaque calculus was not present, but that a translucent calculus might be present.

MR. MYLES (in reply).—The case which Professor Bennett had mentioned, was further proof that a calculus could be present without creating symptoms. He (Mr. Myles) thought it would be interesting to collect kidneys with calculi in them, and find out the amount of damage done to the kidney in each case. He quite endorsed Mr. Ball's remarks about abdominal palpation, and he had often seen surgeons deceived by this procedure. He hoped that Sir William Stokes did not think that he (Mr. Myles) objected to a vertical incision in addition to the original one; but, hitherto, he had commenced the incision from behind, and believed that there was an advantage in so doing, as in that way he could begin with the retro-peritoneal operation. Mr. M'Ardle had pointed out an advantage in controlling hæmorrhage obtained from the anterior incision. Mr. Myles considered that an open question, as the placing the clamp on the renal vessels had sometimes been attended with great danger.

The Section then adjourned.

Friday, April 2, 1897.

The PRESIDENT in the Chair.

Treatment of Strangulated Femoral Hernia, with Gangrenous Intestine.

MR. HEUSTON brought forward two cases of strangulated femoral hernia in women of over sixty years of age, where, owing to the gangrenous condition of the intestine, it was necessary to excise the intestine and corresponding mesentery. In the first case the symptoms of strangulation had lasted for four days before the operation, and the patient was in an extremely collapsed condition; eleven inches of the intestine was removed, and the intestine was united by suture. The patient died three days after the operation from collapse, when the intestine was found united but gangrene had supervened in it for about an inch above the line of suture. The second patient was seen two days after the symptoms of strangulation had come on; eight inches of the intestine was removed and the intestine united by suture; the patient recovered.

perfectly without complication, the method of radical cure employed in both cases being that advocated some years since by Mr. Heuston and described in Treves' operative surgery. In both the cases it was noted that no fluid was contained in the sac, which was intimately attached to the gangrenous contents.

Mr. Heuston then stated the treatment recommended in the different text-books on surgery in general use, and pointed out the advice of all the more recent works, with one exception, was in favour of primary resection, whenever possible, instead of the older method of artificial anus. He showed that, by statistics, this was the proper treatment, as the percentage of mortality after artificial anus was about 90, while that after resection was 47, and that the more recent cases gave a much better percentage than this, owing to the improvements in the methods of union of the divided intestine.

Mr. Heuston objected to the use of any of the foreign bodies which have been introduced within the past few years, believing that they introduced an unnecessary element of danger, and that, in his experience of a large number of enterectomies for different causes, he had uniform success by the use of sutures applied in a method which he then described, and claimed that the union could be completed by suture in as short a time as by any of the appliances.

Intestinal Anastomosis.

PROFESSOR BALL brought forward a new pattern of decalcified bone ring, for end to end intestinal anastomosis. It resembled in shape a Murphy's button, but made in one piece, with a deep groove round the circumference, of sufficient width to allow the edges of divided intestine to be involuted, while keeping the peritoneal surfaces in contact, the groove being induced to accommodate any surplus intestine. The essential feature of its use is the primary introduction of a lacing suture loosely connecting both ends of bowel round their entire circumference; the ring is subsequently introduced by pulling apart two of the loops, and as the suture is tightened, it falls into the groove in the ring, drawing in and firmly uniting both edges of divided intestine, while the lips of the groove support the peritoneal surfaces of the intestine in apposition. An additional continuous suture passed round the entire circumference through the outer coats of the bowel only, where the peritoneal surfaces are in contact, completed the union.

Professor Ball claimed that it was the most rapid method as yet introduced, and, if properly done, leakage was quite impossible.

By making the upper end larger than the lower, the difficulty of joining a dilated gut above a stricture to a contracted gut below, was quite obviated, the decalcified bone was absorbed without difficulty. Four cases were recorded of the use of this ring by the author—1 of resection of small intestine for a large gangrenous hernia, 1 of resection of upper portion of rectum, 2 of colectomy for malignant disease; one of the latter, a case of very extensive cancer of the transverse colon, died suddenly seven days after operation, the other three made perfect recoveries.

MR. LENTAIGNE advocated resection in gangrene. He believed Mr. Ball's button to be one of the most rapid means obtainable of procuring safe anastomosis, but would not say it was better than Mr. Hayes' method. He differed from Mr. Heuston in recommending the suture in all cases. Suture of the intestine without a button was often too slow. He thought Mr. Ball's method was better than Murphy's. It was a fact that many Murphy's buttons had been passed successfully, but many accidents had also happened.

MR. M'ARDLE said he had seen Mr. Murphy operate, and he could assure them that half the time occupied by Mr. Ball had not been occupied by Mr. Murphy in placing his button. With regard to the subsequent occurrence of strictures, these had not yet had time to occur in Mr. Ball's cases; but how did they know that strictures would not occur? He considered Murphy's method invaluable. Failures from the use of Murphy's button had occurred, and arose from imperfections in the suture giving rise to leakage, or from some spring having given way. Other failures had been the result of putting Murphy's button in improper situations, or from using a button of improper size. Dr. Heuston had said that he had had uniform success by one method, but he (Mr. M'Ardle) did not know of uniform success by any one method.

MR. MYLES said he thought that a false analogy was often drawn between operations for resection of the bowel and strangulated hernia and the operations for resection of malignant disease of the bowel causing obstruction. He considered Mr. Heuston's statistics unreliable; and as gangrene of the intestine might occur in a young man or in an elderly person, or the gangrene might be got in an early or late stage, surely these cases could not be put together for statistical purposes; but, nevertheless, all these cases had to be brought together. Where the gut had been fixed to the abdominal wall, and an artificial anus made, the re-establishment of the bowel was very difficult. He was prepared to acknowledge that Mr. Heuston's cases, when compared with Mr. Ball's, did not uphold his own thoughts. In both cases the groups

were too small to draw any but mild deductions. The fact that all bobbins, exclusive of Murphy's button, had a tendency to produce cicatricial contraction of the gut he did not believe to be quite true. There was a type of bobbin with a deep groove between two projections, and, obviously, if the bobbin were two inches at the periphery and one and a half inches at the groove, the gut would have to be puckered and thrown into folds which became adherent, and the material for the subsequent cicatricial contraction was provided. Mr. Ball's bobbin he considered most ingenious, and an apparatus which every surgeon ought to have by his side. He congratulated Mr. Ball on dividing Poupart's ligament. He had lately been at an operation where it had been proposed to use a bobbin, but this was not done. If Poupart's ligament had been divided, the bobbin might have been used and a considerable amount of time saved. At the same time, he did not quite understand how Mr. Ball prevented a weakness having taken place at the abdominal ring after division of Poupart's ligament. Under certain circumstances, where there was a fat mesentery, he thought it impossible to produce equable uniform pressure by means of a Murphy's button.

PROFESSOR BENNETT asked if, in a case of Dr. Ball's, a ventral hernia had not occurred after the division of Poupart's ligament.

MR. HEUSTON (in reply) said that his operations by simple suture had been carried out in much less time than Mr. Lentaigne thought. He disagreed entirely from Mr. M'Ardle in the use of Murphy's button, and he did not see what right any surgeon had to deliberately set up gangrene, close it up, and leave it to extend a certain distance to be limited by a part of the gut cut by the bobbin. He did not say that he was opposed to bobbins, but none of them so far were, in his opinion, proper appliances; but the best of them, he considered, was Mr. Ball's. Mr. Myles' criticisms about his (Mr. Heuston's) statistics were quite fair, but they were the only kind obtainable by him.

MR. BALL (in reply) said that he had answered Professor Bennett's question in his paper. A hernia had occurred after division of Poupart's ligament, but the hernia had not occurred at the femoral ring, and it was not in consequence of the division of Poupart's ligament that the hernia took place. It was at the site of the drain tube. The closure of the femoral ring was easily brought about by the division of Poupart's ligament. With regard to Mr. M'Ardle's remarks about a fistula which had occurred in one case, this fistula had occurred in the case of the rectum, and he (Mr. Ball) said that he had not yet come across any appliance

which did not occasionally produce fistula. He had seen a case in which a large fistula had been made by Murphy's button. In other parts of the intestinal tract there were cases to show that Murphy's button was frequently a real danger which might be avoided by other methods. He had not yet seen strictures caused by the use of a ring.

The Section then adjourned.

SECTION OF MEDICINE.

President—GEORGE F. DUFFEY, M.D., President of the Royal College of Physicians of Ireland.

Sectional Secretary—H. C. TWEEDY, M.D.

Friday, March 12th, 1897.

The PRESIDENT in the Chair.

Significance of Dilatation in Functional and Organic Diseases of the Stomach.

DR. M. A. BOYD read a paper on the above subject.

DR. DOYLE said he believed that a tube with as large a lumen as possible was the best for lavage. Lung troubles, he believed, such as chronic bronchitis, were causes of partial dilatation of the stomach, brought about by the passive congestion interfering with the nutrition of the organ. Another cause was the badly kept condition of the teeth of the poorer classes, and the short time given by them to the proper mastication of their food, which was usually of a starchy nature.

DR. POTTER said that he had frequently found a large teaspoonful of vegetable charcoal, taken an hour or two after meals, very beneficial in the treatment of dilated stomach.

DR. TWEEDY remarked that with reference to the constipation which usually occurred in connection with dilatation of the stomach, he considered that this symptom could be explained by mechanical means, and that it was not necessary to seek for a definite pathological cause. He referred to a case which he had formerly shown, where the stomach filled almost the entire abdominal cavity, the condition having been brought about practically by the continual eating of large quantities of potatoes, and he thought that the pressure of the stomach filled with a large quantity of food of this nature, which cannot be got rid of as quickly as it ought to be, was one cause of constipation. Constipation could also be accounted for on anatomical grounds. He explained that

the first portion of the duodenum was about two inches in length and freely movable, while the second portion was fixed. It was therefore evident that a dilated stomach filled with starchy food could, by drawing down the pylorus and with it the first part of the duodenum, produce a mechanical kink at the junction of the first and second parts of the duodenum sufficient to cause obstruction to the free passage of food.

The PRESIDENT asked if Dr. Boyd meant by partial dilatation a condition in which one end of the stomach was dilated and not the whole organ. He was not quite sure that Hilton Fagge was correct in saying that there was fibroid thickening of the pylorus in cases of complete distension. Fagge described acute dilatation of the stomach, and mentioned at least one case in which dilatation occurred so suddenly that coma set in and death followed. He (the President) believed that muscular wasting was really at the bottom of many forms of dilatation, but the exact cause of the wasting he did not know. He asked if the pylorus had ever been stretched as a treatment in this country. The extent of the dilatation could be made out by giving the patient effervescent powders, or by filling the stomach with large quantities of fluid. He asked if Dr. Boyd was convinced that the splash sound obtainable was always diagnostic of dilatation.

DR. BOYD then replied.

Two Cases of Relapse in Scarlatina.

DR. E. MACDOWEL COSGRAVE read a paper on two cases of relapse in scarlatina.

CASE I. was a girl of nine years of age, who was admitted into Cork-street Fever Hospital on November 12th, 1896, suffering from a severe attack of scarlatina anginosa, the temperature falling to normal on the ninth day. On the twenty-eighth day, whilst desquamation was occurring in large flakes on the feet, the child had an attack of vomiting, and the temperature ran up to 105.8° , and a punctiform rash appeared, the tongue and pharynx being also typically affected, and albumen appearing in the urine. On the eighth day of the relapse secondary desquamation commenced, and gradually spread over the body.

CASE II. also was a girl, aged nine years, who was admitted to Cork-street Hospital with a younger sister, on November 27th, 1896, suffering from well-marked scarlatina. Eighteen days after admission, whilst free desquamation was going on, the child complained of headache and sore throat, the temperature rose to 105.8° , and a punctiform rash appeared, desquamation where occurring was increased, and where finished was repeated.

DR. J. W. MOORE agreed that true relapses had occurred in Dr. Cosgrave's cases. He (Dr. Moore) said it was an interesting fact that by means of isolated hospitals it was possible to produce many cases of relapse in scarlatina, provided that the patients were kept in the wards long enough. It is now believed, he said, that the cause of the relapse is a true re-infection, and that immunity is not established by the first attack; from which fact it would be learnt that scarlatina convalescents should not be kept for any length of time in the wards in which they had been ill. He thought that the Dublin Hospitals were at fault in this matter. Cases of scarlatina, he said, should be removed as soon as possible after the patients get up to Convalescent Homes for Infectious Cases.

DR. MACDOWEL COSGRAVE, in reply, said that in Cork-street Hospital the patients were not kept as long as possible in the same ward, but were removed to another ward, and very often to another building. There was a Convalescent Home, he said, in connection with Cork-street, and, so far as possible, the cases were kept separate.

Treatment of Cancer with Celandine (Chelidonium Majus).

DR. JOSEPH REDMOND read a paper on the treatment of cancer with celandine (*Chelidonium majus*). He exhibited patients suffering from epithelioma of the tongue and of the lip, and read notes of two cases—one of cancer of the œsophagus, and the other of cancer of the liver. All cases were improving under treatment with celandine.

The PRESIDENT said that he had seen the papers to which Dr. Redmond had referred, and he (the President) had noticed that Dr. Redmond had carried out the treatment with very good results. It was remarkable that so little pain had been caused by the use of the drug, seeing it was an irritant and an active narcotic poison. Had Dr. Redmond noticed that the administration of the drug had been followed by any effect on the secretions—that was, did it produce any purgative effect? Formerly the drug was given in hepatic diseases, and seemed to have done good by internal administration.

DR. NINIAN FALKINER recommended the use of the juice, freshly made, to other preparations of the drug.

DR. CRAIG, in referring to Dr. Redmond's case of œsophageal stricture, said that the symptoms were particularly symptoms of dyspepsia. He had found patients come to hospital complaining of inability to swallow anything, and yet attempts to make such patients swallow food were often successful.

DR. J. W. MOORE said that some of the cases brought forward by Dr. Redmond were a little open to doubt as being cases of cancer, and that the symptoms were much more like acute dyspepsia. The mental phase in cases of cancer was to be regarded, for patients suffering from the disease grasp at any straw, and begin to think they are going to be cured. Again, it was possible for the secondary effects in cancer to be relieved by remedies without doing the primary cause any good. Condurango, he said, had been used in the treatment of cancer, but without much benefit. Another treatment for cancer was to give the patient erysipelas, and good results had been sometimes achieved in this way.

DR. REDMOND, in reply, said that he had never noticed any intense diarrhoea after administration of the drug. Concerning Dr. Craig's remarks about oesophageal stricture, he (Dr. Redmond) had made sure that his patient could not swallow, and at the same time that he was getting worse. Positive diagnosis of oesophageal stricture could hardly be made. As regards what Dr. Moore had said about giving erysipelas to a patient with cancer, he (Dr. Redmond) always tried to confine the erysipelas to the patient who had it.

The Section then adjourned.

Friday, April 9, 1897.

The PRESIDENT in the Chair.

Some Introductory Remarks on the Diarrhoeas of Children.

DR. LANGFORD SYMES read a paper entitled "Some Introductory Remarks on the Diarrhoeas of Children." [It will be found in Vol. CIII., page 390.]

DR. CRAIG said that the ætiology of the disease seemed to be marked by a classification which was arrived at by ascertaining the cause of the disease. One cause of the disease was dyspepsia, and another cause, in a great majority of cases, was infection from milk. Therefore an elaborate classification was not needed.

DR. W. G. SMITH considered the subject a most important one. The small intestine, he said, was the chief seat of digestive processes in adults as well as in children. The stomach was a comparatively small digestive chamber, and prepared the food for the small intestine. He agreed with Dr. Symes in saying that chemical changes were produced by micro-organisms in the small intestine. From a practical point in therapeutics, the treatment of diseases

in the alimentary canal might be based on — first, sensory impressions, such as pain; secondly, the chemical nature of the contents of the intestine; and thirdly, the movements of the intestine. It was agreed that the chyme, as it passed out of the stomach in an acid condition, maintained its average acidity down to the ileo-cæcal valve. The contents of the small intestine were never alkaline, and generally acid. Carbonate of sodium was prescribed to prevent hyper-acidity in the small intestine. The main causes of bad effects in children were over-feeding and direct poisoning. It was necessary to regulate the amount of carbohydrate in the food of children, as an injurious overplus of acidity resulted from improper carbo-hydrate. Fresh milk, he stated, gave an amphoteric reaction, due to the fact that milk always contained a mixture of mono- and di-phosphate of sodium.

DR. SYMES thanked those present for their kind attention to his paper. Diarrhoea, he said, was a most fatal condition in young children. With regard to Dr. Craig's remarks about a classification, he said that one advantage from such was that simplicity was arrived at.

Angina Pectoris.

DR. JOHN KNOTT read a communication on *Angina Pectoris*. [It will be found in Vol. CIII., pages 369, 465, and in Vol. CIV., page 327.]

DR. DOYLE made some remarks, and

DR. KNOTT replied.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—CONOLLY NORMAN, F.R.C.P.I.

Sectional Secretary, E. J. McWEENEY, M.D.

Friday, March 26, 1897.

SIR C. NIXON, M.D., in the Chair. '

Infective Endocarditis.

DR. M. A. BOYD read a paper on this subject founded on the case of a man, aged twenty-five, who died at the Mater Hospital after an illness of three days' duration, with extreme pyrexia, delirium, and petechial eruption. At the autopsy there were miliary abscesses in the kidney and myocardium, and the mitral valve presented an area near the margin of one cusp devoid of endocardium, and coated with recent fibrin. The blood was fluid. Sections made from the mitral valve showed extensive necrosis and the margin fringed with compact clusters of cocci. The capillaries of the myocardium were plugged with cocci, and the kidney showed similar conditions. Cultures made during the *post-mortem* by Dr. McWeeney produced *Pyococcus aureus* in pure cultivation. The patient had an alcoholic history, and the illness dated from severe exposure to wet and cold. The mode of entrance of the organisms was otherwise unexplained. Dr. McWeeney demonstrated the sections and cultures.

DR. E. J. McWEENEY looked upon the case as of considerable interest as indicating a morbid condition extremely liable to be overlooked at an examination not of a very careful character. The miliary abscesses in the kidney were very small, and the condition of the mitral valve was also invisible to the naked eye, but the grave condition was revealed under the microscope. One of the microscopical sections showed the whole of the central portion of one of the little abscesses in the kidney taken up by a zooglœa mass of micrococci. Another section showed the myocardium close to the point of attachment of the mitral valve, and it could be seen that the spaces, normally occupied by capillaries, were plugged with masses of micrococci. From a cultivation the *Staphylococcus aureus* had been obtained, and a plate cultivation showed the liquefying power of the organism upon gelatine. The organism produced a pale, washy, yellow colour. The organisms had been evidently circulating in the blood of the patient.

The CHAIRMAN said that probably everyone was familiar with

cases of rheumatic fever undergoing a very bad course where there had been a preceding heart affection. After death the heart, in such cases, presented the ordinary appearance of malignant endocarditis, and the condition seemed to be secondary to a pre-existing organic disease. On the other hand, malignant endocarditis was sometimes found as a primary condition. Some writers said that micrococci, similar in character to those which had been found in malignant endocarditis, were found in all forms of endocarditis. An analogy, he thought, might be drawn between cases of malignant endocarditis and cases of acute tuberculosis, in both of which diseases acute primary forms were sometimes found, or acute forms were sometimes grafted on to chronic ones.

DR. PARSONS said that most cases of malignant endocarditis which had come under his notice had had their origin in disease of the middle ear, the septic material having made its way into the carotid artery or the jugular vein.

DR. BOYD (in reply) said that there was no real indication as to the nature of the case. The symptoms had been those of typhus fever to a great extent, and not till *post-mortem* examination did the nature of the case dawn upon him. There had been no disease of the middle ear, and no indication at all in any organ of a primary seat of disease.

Lantern Demonstration of X-Ray Photos, illustrative of various Pathological Conditions.

DR. LANE JOYNT gave a lantern exhibition of a series of 35 X-ray photos, illustrative of various pathological conditions, and showing the extent and utility of this aid to medicine and surgery. Four cases of Colles' fracture were shown, of which three cases had fracture of the styloid process of the ulna. Dr. Joynt drew attention to the fact that the bones of tuberculous patients re-acted differently to the X-rays than did sound bone. The most noticeable feature was the homogenous appearance of the ends of bones such as phalanges, with marked atrophy of the compact covering, and in some cases the shafts of the bones are seen to be in a similar condition. The bones, as a whole, are more transparent than sound bone, even in parts not showing the clinical signs of disease.

A skiagraph of the pelvis of a boy, six years old, suffering from congenital dislocation of the hip, showed the complete outline of the bony framework of the body. The condition of luxation could be plainly seen. The exposure was 20 minutes. An oxalate of lime calculus placed in the kidney of a subject as a control experiment for cases of suspected renal calculus, under the care of Dr. Myle,

showed clearly. The exposure was 35 minutes in a body $7\frac{1}{2}$ inches thick.

A skiagraph of elbow of a boy, twelve years old, exhibited a good example of a supra-condyloid process on humerus—the presence of which had caused a doubtful diagnosis of fracture, to be added to that of dislocation of elbow. The case proved to be a dislocation backwards and outwards, of old standing. Dr. Joynt referred to the difficulty of getting useful results in injuries to the shoulder and hip in stout persons—cases where this means would be most valuable—so far, $7\frac{1}{2}$ inches seemed to be the average limit of thickness, of parts, in which with an 8-inch spark, he had obtained satisfactory results. The right side of the chest permits the rays to pass through better than the left, but no useful results were obtained in cases of suspected aneurysm.

MR. MYLES said that up till the present the positive information of the X-ray photographs had been worked at, and not the negative. Dislocations of the hip and shoulder were subjects on which they would like to get authoritative information. He had photographed a shoulder which had received a severe injury from the falling of a heavy piece of wood on it. The symptoms, on examination, were almost exactly those of sub-coracoid dislocation of the humerus. The patient was a very muscular man, and on examination under chloroform crepitus was easily obtained, the head of the bone was in its normal seat, and, so far as he could judge, the fracture was somewhere in the neighbourhood of the head of the humerus. The photograph had been a failure. Fracture of the styloid process of the ulna in Colles' fracture was of constant occurrence. The one case of Colles' fracture which Dr. Joynt had photographed for him was remarkable in that the patient merely complained of a sprained wrist, and when, after his wrist had been photographed, he was told that he had sustained a fracture, he was exceedingly surprised. He referred to the difficulty of obtaining photos of the hip, especially in muscular individuals. The photographs of congenital dislocation in the child were of great interest, as showing that if he could have obtained such information some years ago, three little children would have been saved from the pain of operations from which no benefit had accrued. With reference to the photograph of the hand, he had noticed a curious ramified appearance of the ends of the phalanges and the metacarpal bones in cases of caries of the wrist.

DR. HAUGHTON considered the hip joint, at present, almost out of reach of the X-rays, except in cases where the antero-posterior diameter was only seven inches or less. The difficulty, he thought,

consisted in the presence of the glutei and quadriceps muscles which were of a tendinous nature. There should be no difficulty in locating foreign bodies of a metallic nature. It had been proved that glass was opaque enough to give a shadow.

DR. McWEENEY, in referring to one of the photographs, said that in the removal of parts of bones he had observed that the bones far away from the seat of tubercular lesion showed a sort of sponginess, so that they could be cut like cheese, and that condition was due to a dilatation of the cancellous tissue, and a sort of thinning of the osseous trabeculæ. That might be assigned to a sort of hypoplasia of the whole osseous system. Some writers thought that in tuberculosis such a state of cachexia might be produced that absorption of the osseous material could occur.

DR. LANE JOYNT, in reply, thanked those present for the way in which they had received his communication. He had lately tried to skiagraph a man with aneurysm of the descending aorta, but the shadows had been too indefinite to indicate anything. He presumed that a shadow thrown by an aneurysm—if thrown—would, in that case, coincide with the view of the heart.

Locomotor Ataxy.

DRS. COLEMAN and O'SULLIVAN brought forward this case. Dr. Coleman detailed the clinical history, according to which it appeared that the patient, a man aged forty-one, a book-keeper, never had syphilis, but he suffered much from exposure to wet and cold. His symptoms began two and a half years before his death with lightning pains in his legs, followed, six months later, by slowness in micturition and occasional incontinence of urine. Eighteen months before his death he had transient diplopia, stumbled in the dark, and felt unsteady on his legs; about the same time he noticed numbness of the fingers of his left hand. The unsteadiness in walking progressed for the next twelve months, at the end of which time he suffered from painful tenesmus and girdle sensation.

On admission to hospital his symptoms were as follows: slightly ataxic gait; inco-ordination of movements of arms; Romberg's sign well marked; tactile sensation deficient over distribution of left ulnar nerve, less so in right hand; thermo-anæsthesia in left arm and both legs, with slight analgesia and retarded transmission of painful sensations; Argyll-Robertson pupil; loss of knee-jerks, and of plantar, cremasteric, and of abdominal reflexes. Nutrition of toe-nails and of skin of soles of feet was much impaired. He had old-standing tuberculo-fibroid disease of both lungs, and he

died five weeks after admission to hospital of disseminated pulmonary tuberculosis.

PROF. O'SULLIVAN said that the *post-mortem* examination showed thickening and sclerosis of the aortic valves; cavities, fibroid changes, and bronchiectasis in the right lung and disseminated tubercles in the left. On microscopic examination the nerves of the cauda equina showed increase of endoneurium and marked thickening of the inner coats of the arteries. The cord showed degeneration of the posterior columns, which could be traced from the lower coccygeal region, where the cord was two millimetres in diameter, to the medulla oblongata. The ventral field of the posterior columns was free from degeneration throughout. A narrow zone running along the median septum was free in the lower part of the cord. In the dorsal region the medullated fibres of Clark's column had entirely disappeared. The posterior roots outside the cord were markedly degenerated up to about the 5th dorsal segment; from this on to the 2nd dorsal segment they were almost free, and the path of these undegenerated fibres in the cord formed a narrow strip which could be traced along the outer margin of Goll's column to the medulla, where they ended in the nucleus cuneatus. Above the 2nd dorsal segment the degeneration of the posterior roots recurred, and was most marked in the cervical enlargement. Their path in the cord was marked by a strip of degeneration lying outside the last-mentioned and also passing to the nucleus cuneatus. Above the cervical enlargement the degeneration of the incoming roots suddenly ceased. The degeneration was most marked all through on the left side. Two of the spinal ganglia which were examined showed slight proliferation of the layer of cells lining the spaces occupied by the ganglion cells.

DR. M. A. BOYD asked if the peripheral nerves had been examined in the case. Any interference with the peripheral nerves would account, to a great extent, for the symptoms in locomotor ataxy.

DR. McWRENEY considered that Professor O'Sullivan ought to be congratulated on the way in which he had worked out the case. The subject was one which needed thorough-going investigation. He asked if Professor O'Sullivan had examined the posterior roots by Marchi's method. Professor Leyden had lately stated that Weigert's method was incapable of showing a relatively slight amount of degeneration in the posterior nerve roots, but that Marchi's method would show it. Professor Leyden had described certain large round cells as occasionally to be seen surrounding the ganglion cells, and he had also described the same kind of cells,

which were known as Leyden's cells, surrounding the trophic cells in the anterior horn in cases of infantile paralysis. Did Professor O'Sullivan utilise Pal's method in studying the changes in the ganglion cells?

THE CHAIRMAN asked if Professor O'Sullivan considered the condition of the blood vessels in the lower part of the cord a primary or a secondary effect of the lesion.

PROFESSOR O'SULLIVAN (in reply) said, in answer to Dr. Boyd, that the peripheral sensory nerves had been examined. With reference to Dr. McWeeney's questions, he said that in fresh degenerations, when the myeline was altered but not absorbed, Marchi's method was useful. In the case of old chronic processes with sclerosis, that method was less and less useful, but he had the very strongest opinion of the usefulness of Marchi's method in almost all forms of degeneration. It was true that degenerations which were absolutely invisible by Weigert's method, showed strongly by Marchi's. He did not think that the cells which he had seen could have been what Dr. McWeeney said were described by Leyden. As regards the study of ganglion cells in general, he used Nissl's method. With reference to Sir C. Nixon's remarks, he (Prof. O'Sullivan) said he had not had sufficient experience to say what lesion was primary or secondary, but he was of opinion that both the lesions of the blood vessels and nerves had the same cause and were independent.

Addison's Disease, with Bilateral Supra-renal Atrophy.

THE CHAIRMAN (SIR C. NIXON) showed the viscera from a well-marked case of Addison's disease. The adrenals were reduced to their shells of fibroid and fatty tissue, owing to some process of the nature apparently of simple atrophy. Tubercle was conspicuously absent. Dr. McWeeney had prepared sections from the atrophic tissue, and had demonstrated narrow strands of epithelial cells scattered here and there through the mass of fibrous material, and representing all that remained of the adrenal cortex. (Sections shown.)

DR. MCWEENEY said that he, himself, could not have been sure that there would have been such complete destruction of the supra-renal capsules, had he not been at the *post-mortem* examination himself, and assisted Sir C. Nixon; a very careful dissection had been made. The supra-renals had been reduced to mere shells, and microscopical examination showed a peculiar brown zone of cells between two brilliant red areas of connective tissue. The brown area represented all that remained of the supra-renal cortex.

Examination had failed to reveal the cause of the destruction. There was a dense mass of fibrous and fatty tissue, in which were embedded some small strands, which represented the only surviving elements of the supra-renals.

The Section then adjourned.

THE DISINFECTION OF BOOKS BY THE VAPOUR OF FORMALIN.

ELMER GRANT HORTON, B.S. (*Medical News*, New York, LXIX. 6), has tried a series of experiments on the power of formalin to disinfect books. To avoid destroying the books a small piece of paper smeared with twenty-four hour old cultures of the bacilli of enteric fever, diphtheria, &c., was placed in folded-down pages; the books were then exposed to formalin under a bell-glass, and afterwards allowed to stand about for various periods; finally the infected papers were placed in bouillon at 37° C., and observed daily for some time. The books were sometimes on their sides and sometimes on end, but were never open, and sometimes several were placed in a pile. The conclusions arrived at were:—

1. Books can be disinfected in a closed space, simply by vapour of commercial formalin by using 1 c.c. of formalin to 300 c.c. or less of air.

2. The vapour of formalin is rapid in its disinfectant action. The effect produced in the first fifteen minutes is practically equivalent to that observed after twenty-four hours.

3. An increase in the amount of air to each c.c. of formalin is not counterbalanced by an increase in the length of time of exposure.

4. In case the disinfection has been incomplete, the vitality of the organisms has been so weakened that they survive only if transferred in a few hours to media suitable for their development.

5. The use of vapour of formalin is not detrimental as far as observed in any manner to the books, nor is it objectionable to the operator beyond a temporary irritation of the nose and eyes, somewhat similar to that produced by ammonia.

SUICIDES IN FRANCE

ARE increasing actually as well as relatively. The annual average for the years 1861-65 was 4,661, or 12 per 100,000 inhabitants; for the years 1871-75, 5,276, or 15 per 100,000 inhabitants; for the years 1881-85, 7,339, or 19 per 100,000; and for the years 1886-90, the yearly average was 8,226, or 21 per 100,000.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D. Univ. Dubl.;
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VITAL STATISTICS

For four Weeks ending Saturday, May 22, 1897.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	May 1	May 8	May 15	May 22		May 1	May 8	May 15	May 22
Armagh -	28.0	35.1	35.1	7.0	Lisburn -	4.3	17.0	21.3	8.5
Ballymena	5.6	5.6	22.5	22.5	Londonderry	25.1	20.4	23.6	9.4
Belfast -	24.6	26.1	27.6	20.8	Lurgan -	27.4	4.6	4.6	27.4
Carrickfergus-	17.5	29.2	40.9	0.0	Newry -	16.1	16.1	12.1	12.1
Clonmel -	9.8	34.2	24.4	4.9	Newtownards	11.3	34.0	11.3	51.0
Cork -	36.0	29.1	35.3	25.6	Portadown -	12.4	18.6	24.7	18.6
Drogheda -	34.2	19.0	11.4	7.6	Queenstown	23.0	40.2	11.5	28.7
Dublin -	28.8	33.3	27.4	26.7	Sligo -	20.3	30.5	5.1	10.2
Dundalk -	29.3	4.2	25.1	16.8	Tralee -	0.0	39.2	50.4	22.4
Galway -	41.5	22.7	34.0	26.4	Waterford -	11.9	23.9	15.9	9.9
Kilkenny -	18.9	37.8	33.0	14.2	Wexford -	18.1	18.1	9.0	22.6
Limerick -	15.4	18.2	9.8	18.2					

In the week ending Saturday, May 1, 1897, the mortality in thirty-three large English towns, including London (in which the rate was 16.9), was equal to an average annual death-rate of 18.3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22.0 per 1,000. In Glasgow the rate was 20.6. In Edinburgh it was 30.1.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 25·4 per 1,000 of their aggregate population, which, for the purposes of this Return, is estimated at 984,720.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 3·8 per 1,000, the rates varying from 0·0 in seventeen of the districts to 6·9 in Cork—the 52 deaths from all causes registered in that district comprising 3 from measles, 6 from whooping-cough, and 1 from diarrhœa. Among the 133 deaths from all causes registered in Belfast are 3 from measles, 7 from whooping-cough, 1 from diphtheria, 1 from simple continued fever, 8 from enteric fever, and 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 196—101 boys and 95 girls; and the registered deaths to 198—104 males and 94 females.

The deaths, which are 9 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 29·5 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 28·8 per 1,000. During the first seventeen weeks of the current year the death-rate averaged 38·2, and was 7·2 over the mean rate in the corresponding period of the ten years 1887–1896.

The number of deaths from zymotic diseases registered was 38, being 18 in excess of the average for the corresponding week of the last ten years, but 7 under the number for the previous week. The 38 deaths comprise 16 from measles—being 3 under the number from that disease in the preceding week—13 from whooping-cough (being 1 under the number for the preceding week), 2 from diphtheria, 3 from enteric fever, 2 from diarrhœa, and 1 from cholera. Thirty-one of the 38 deaths from zymotic diseases were deaths of children under 5 years of age.

The weekly number of cases of measles admitted to hospital, which had gradually fallen from 71 in the week ended March 27, to 28 in that ended April 24, further declined to 16. Forty-one measles patients were discharged, 3 died, and 81 remained under treatment on Saturday, being 28 under the number in hospital at the close of the preceding week.

Twenty-one cases of scarlatina were admitted to hospital, against 14 in the preceding week and 17 in the week ended April 17. Twenty-five patients were discharged, 2 died, and 111 remained under treatment on Saturday, being 6 under the number in hospital

on that day week. There were, besides, 20 convalescents at Beneavin, Glasnevin.

The admissions of enteric fever cases declined to 6: 8 patients were discharged, 2 died, and 44 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 37, being 3 under the average for the corresponding week of the last ten years, and 20 under the number for the previous week. The 37 deaths comprise 20 from bronchitis and 15 from pneumonia.

In the week ending Saturday, May 8, the mortality in thirty-three large English towns, including London (in which the rate was 15·5); was equal to an average annual death-rate of 17·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·7 per 1,000. In Glasgow the rate was 23·3, and in Edinburgh it was 22·9.

The average annual death-rate in the twenty-three principal town districts of Ireland was 27·7 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 3·4 per 1,000, the rates varying from 0·0 in sixteen of the districts to 11·7 in Carrickfergus—the 5 deaths from all causes registered in that district comprising 2 from measles. Among the 141 deaths from all causes registered in Belfast are 5 from measles, 1 from scarlatina, 2 from whooping-cough, 1 from simple continued fever, 8 from enteric fever, and 1 from diarrhoea. The 42 deaths in Cork comprise 2 from measles, 3 from whooping-cough, and 1 from diarrhoea. Two of the 6 deaths in Newtownards were caused by whooping-cough.

In the Dublin Registration District the registered births amounted to 219—100 boys and 119 girls; and the registered deaths to 226—123 males and 103 females.

The deaths, which are 46 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 33·7 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 33·3 per 1,000. During the first eighteen weeks of the current year the death-rate averaged 38·0, and was 7·3 over the mean rate in the corresponding period of the ten years 1887-1896.

Zymotic diseases caused 45 deaths, being 7 over the number in the preceding week, and 23 in excess of the average for the eighteenth week of the last ten years. The 45 deaths comprise 8 from measles—being 8 under the number from that cause in the preceding week—4 from scarlet fever (scarlatina), 1 from typhus, 5 from influenza and its complications, 16 from whooping-cough (against 13 in the preceding week), 2 from diphtheria, 2 from enteric fever, 1 from cholera, and 2 from diarrhoea. Two of the 8 deaths from measles occurred in the city and 6 in suburban districts. Thirty-four of the 45 deaths from zymotic diseases were deaths of children under 5 years of age.

The number of cases of measles admitted to hospital was 13, being 3 under the admissions in the preceding week, and 15 under the number in the week ended April 24. Twenty-eight measles patients were discharged, 1 died, and 65 remained under treatment on Saturday, being 16 under the number in hospital at the close of the preceding week.

The weekly number of cases of scarlatina admitted to hospital, which had risen from 14 in the week ended April 24 to 21 in the following week, fell to 16. Twenty-four patients were discharged, 2 died, and 104 remained under treatment on Saturday, being 10 under the number in hospital on the previous Saturday. There were, besides, 18 convalescents at Beneavin, Glasnevin.

Only 4 cases of enteric fever were admitted to hospital, being 2 under the admissions in the preceding week, and 8 under the number in the week ended April 24. Seven patients were discharged, 1 died, and 40 remained under treatment on Saturday, being 4 under the number in hospital on that day week.

Deaths from diseases of the respiratory system, which had fallen from 57 in the week ended April 24 to 37 in the following week, rose to 44, or 8 over the average for the corresponding week of the last ten years. The 44 deaths comprise 22 from bronchitis and 18 from pneumonia.

In the week ending Saturday, May 15, the mortality in thirty-three large English towns, including London (in which the rate was 15·6) was equal to an average annual death-rate of 16·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·8 per 1,000. In Glasgow the rate was 21·4, and in Edinburgh it was 23·7.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 25·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·9 per 1,000, the rates varying from 0·0 in fifteen of the districts to 17·5 in Carrickfergus—the 7 deaths from all causes registered in that district comprising 3 from measles. Among the 149 deaths from all causes registered in Belfast are 4 from measles, 1 from scarlatina, 3 from whooping-cough, 1 from diphtheria, 11 from enteric fever, and 4 from diarrhœa. The 51 deaths in Cork comprise 2 from measles, 1 from scarlatina, and 2 from whooping-cough.

In the Dublin Registration District the registered births amounted to 218—114 boys and 104 girls; and the registered deaths to 190—99 males and 91 females.

The deaths, which are 21 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·3 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 27·4 per 1,000. During the first nineteen weeks of the current year the death-rate averaged 37·5, and was 7·1 over the mean rate in the corresponding period of the ten years 1887–1896.

The number of deaths from zymotic diseases registered was 22, being 3 over the average for the corresponding week of the last ten years, but 23 under the number for the previous week. The 22 deaths consist of 6 from measles, 3 from scarlet fever (scarlatina), 2 from influenza and its complications, 6 from whooping-cough—being 10 under the number from that cause in the preceding week—1 from diphtheria, 1 from cerebro-spinal meningitis, 2 from enteric fever, and 1 from diarrhœa.

Sixteen cases of measles were admitted to hospital, being 3 over the admissions in the preceding week, and equal to the admissions in the week ended May 1, but 12 under those in the week ended April 24. Thirty-four measles patients were discharged, 2 died, and 45 remained under treatment on Saturday, being 20 under the number in hospital at the close of the preceding week.

The scarlatina cases admitted to hospital amounted to 30, against 16 in the preceding week, and 21 in the week ended May 1. Thirty-nine patients were discharged, 1 died, and 91 remained under treatment on Saturday, being 10 under the number in hospital at the close of the preceding week. There were, besides, 24 convalescents at Beneavin, Glasnevin.

Eight cases of enteric fever were admitted, being 4 over the admissions in the preceding week, and 2 over those in the week ended May 1. Twelve patients were discharged, 1 died, and 35

remained under treatment on Saturday, being 5 under the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 30, being 1 under the average for the corresponding week of the last ten years, and 14 under the number for the previous week. The 30 deaths comprise 15 from bronchitis and 10 from pneumonia.

In the week ending Saturday, May 22, the mortality in thirty-three large English towns, including London (in which the rate was 15·4), was equal to an average annual death-rate of 17·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·3 per 1,000. In Glasgow the rate was 22·2, and in Edinburgh it was 26·9.

The average annual death-rate in the twenty-three principal town districts of Ireland was 21·9 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the twenty-three districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in twenty of the districts to 2·8 in Belfast—the 112 deaths from all causes registered in that district comprising 1 from measles, 1 from scarlatina, 1 from whooping-cough, 1 from diphtheria, 8 from enteric fever, and 3 from diarrhoea. Among the 37 deaths from all causes registered in Cork are 3 from whooping-cough.

In the Dublin Registration District the registered births amounted to 217—120 boys and 97 girls; and the registered deaths to 183—99 males and 84 females.

The deaths, which are 11 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·3 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 26·7 per 1,000. During the first twenty weeks of the current year the death-rate averaged 37·0, and was 6·8 over the mean rate in the corresponding period of the ten years 1887–1896.

Deaths from zymotic diseases further declined to 17, or 3 under the average for the corresponding week of the last ten years. The 17 deaths comprise 5 from measles, 1 from influenza, 6 from whooping-cough, 2 from diphtheria, and 1 from enteric fever.

Sixteen cases of measles were admitted to hospital. Seventeen measles patients were discharged, 2 died, and 42 remained under treatment on Saturday, being 3 under the number in hospital on that day week.

Thirty-one cases of scarlatina were admitted to hospital, against 30 in the preceding week, and 16 in the week ended May 8. Thirteen patients were discharged, and 109 remained under treatment on Saturday, being 18 over the number in hospital at the close of the preceding week. There were, in addition, 24 convalescents at Beneavin, Glasnevin.

The weekly number of cases of enteric fever admitted to hospital, which rose to 8 in the previous week, further rose to 12. Ten patients were discharged, 1 died, and 36 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

Thirty-seven deaths from diseases of the respiratory system were registered, being 6 in excess of the average for the corresponding week of the last ten years, and 7 over the number for the previous week. They comprise 22 from bronchitis and 13 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W. for the Month of May, 1897.

Mean Height of Barometer, -	-	-	29.976 inches.
Maximal Height of Barometer (on 16th, at 9 a.m.),	30.456	„	
Minimal Height of Barometer (on 28th, at 7 p.m.),	29.217	„	
Mean Dry-bulb Temperature, -	-	-	50.5°.
Mean Wet-bulb Temperature, -	-	-	46.4°.
Mean Dew-point Temperature, -	-	-	42.2°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	.270	inch.	
Mean Humidity, -	-	-	73.8 per cent.
Highest Temperature in Shade (on 16th), -	63.6°.		
Lowest Temperature in Shade (on 6th), -	36.2°.		
Lowest Temperature on Grass (Radiation) (on 6th), -	-	-	33.8°.
Mean Amount of Cloud, -	-	-	49.1 per cent.
Rainfall (on 14 days), -	-	-	1.139 inches.
Greatest Daily Rainfall (on 6th), -	-	-	0.266 inch.
General Directions of Wind, -	-	-	N.W., N.E.

Remarks.

A cold, rather dry month—very showery at the beginning and close, fine and bright in the intervening period, with absolute drought from the 12th to the 24th inclusive, partial drought commencing on the 9th. The prevailing winds were from polar

quarters—N.W., N.E., and E. The rainfall was only 56 per cent. of the average for May.

In Dublin the arithmetical mean temperature (50.9°) was decidedly below the average (52.0°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 50.5° . In the thirty-two years ending with 1896, May was coldest in 1869 (M. T. = 48.2°), and warmest in 1893 (M. T. = 56.7°). In 1894 the M. T. was 49.2° ; in 1895 it was 54.3 , and in 1896, 55.2° .

The mean height of the barometer was 29.976 inches, or 0.013 inch below the corrected average value for May—namely, 29.989 inches. The mercury rose to 30.456 inches at 9 a.m. of the 16th, and fell to 29.217 inches at 7 p.m. of the 28th. The observed range of atmospheric pressure was, therefore, 1.239 inches.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 50.5° , or 5.5° above the value for April, 1897 (45.0°). Using the formula, *Mean Temp.* = *Min.* + (*max.* - *min.* $\times .47$), the value was 50.5° , or 1.1° below the average mean temperature for May, calculated in the same way, in the twenty-five years, 1865-89, inclusive (51.6°). The arithmetical mean of the maximal and minimal readings was 50.9° , compared with a twenty-five years' average of 52.0° . On the 16th the thermometer in the screen rose to 63.6° —wind, E.N.E.; on the 6th the temperature fell to 36.2° —wind, N.W. The minimum on the grass was 33.8° on the 6th.

The rainfall amounted to 1.139 inches, distributed over 14 days. The average rainfall for May in the twenty-five years, 1865-89, inclusive, was 2.030 inches, and the average number of rainy days was 15.4. The rainfall, and—to a less extent—the rainy days, were below the average. In 1886 the rainfall in May was very large—5.472 inches on 21 days; in 1869, also, 5.414 inches fell on 19 days. On the other hand, in 1895 only .177 inch was measured on but 3 days. In 1896 the fall was only .190 inch on 7 days.

A solar halo was seen on the 24th. High winds were noted on 12 days, attaining the force of a gale (from W.S.W.) on the 4th only. The atmosphere was slightly foggy on the 20th. Hail fell on the 3rd, 5th, 11th, 12th, and 26th.

During the month the thermometer did not fall below 32° in the screen or on the grass. The mean minimal temperature on the grass was 40.9° , compared with 43.1° in 1896, 41.8° in 1895, 37.6° in 1894, 45.6° in 1893, 41.3° in 1892, 37.7° in 1891, 42.2° in 1890, 42.4° in 1889, 37.5° in 1888, and 37.9° in 1887.

May Day was fine and dry.

The week ended Saturday, the 8th, proved a very changeable,

showery period; also extremely cold for the time of year until Friday, when the atmosphere became mild and damp, but genial. There was again a cyclonic distribution of barometric pressure in the N.W. and N., while relatively high pressures were found over the Bay of Biscay, France, and Germany. Hence strong winds from westerly (S.W., W., and N.W.) points blew over the British Islands, accompanied by frequent showers of cold rain and hail in the day time, and by clear, very sharp nights. Particularly heavy hail-showers passed over Dublin on Monday and Wednesday. Thunderstorms occurred at Stornoway on Tuesday, Oxford on Wednesday, and Aberdeen on Thursday. On Friday a very considerable increase of temperature took place, and the air became damp and the sky overcast, as some new depressions approached the West of Scotland from the Atlantic. The change was attended by a rather heavy rainfall in Ireland. At the beginning of the week the planet Mercury was well seen after sunset in the north-western sky—on Monday evening the crescent moon and this planet were seen in conjunction. In Dublin the mean height of the barometer was 29·976 inches, pressure ranging between 29·678 inches at 9 a.m. of Sunday (wind, W. by S.) and 30·158 inches at 9 p.m. of Thursday and Saturday (wind, W.N.W. and N.W.). The corrected mean temperature was 48·2°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 48·0°. On Saturday the thermometer rose to 59·9° in the shade, on Thursday it sank to 36·2°. Rainfall amounted to ·537 inch on seven days, ·266 inch being registered on Thursday. The prevailing winds were W.S.W. and W.N.W.

The “cold wave of May” was very typically represented by the weather of the week ended Saturday, the 15th, which up to Friday more resembled a period in February or March than the second week in May. Parching northerly winds of great strength, clouded skies, and particularly low night temperatures prevailed. Along the east coast of Great Britain sleet or snow and hail fell frequently. In France and Germany night frosts of much intensity proved very injurious to vegetation. During the first four days a cyclonic system hovered over the south of Norway and Denmark, while an area of high atmospheric pressure lay off the west of Ireland. Northerly winds and low temperatures were in consequence prevalent throughout the British Isles—a cold wave passing quickly southwards from the Shetlands to the Mediterranean. At 8 a.m. of Monday the thermometer read 34° at Sumburgh Head in the Shetlands, where snow was falling. Tuesday and Wednesday were extremely cold days, and there were slight hail-showers

in and near Dublin. At inland stations in England, France and Germany, at this time, the thermometer fell at night to or below 32° even in the screen. The anticyclone moved south-eastwards on Thursday and was afterwards found over the S. of England and France. The sky remained densely clouded until noon on Saturday, when the clouds dispersed and a sunny afternoon followed. In Dublin the mean height of the barometer was 30.254 inches, pressure ranging between 30.046 inches at 9 p.m. of Monday (wind, N.N.W.) and 30.441 inches at 9 p.m. of Saturday (wind, E.S.E.). The corrected mean temperature was 48.3° . The mean dry bulb temperature at 9 a.m. and 9 p.m. was 48.2° . On Tuesday the screened thermometers fell to 37.0° , on Saturday they rose to 58.9° . The prevailing wind was N.N.W. The rainfall was only .001 inch on Tuesday (melted hail). On Saturday morning the thermometer read 68° at Haparanda, within the Arctic Circle, and only 38° at Munich.

An uninterrupted spell of anticyclonic weather has to be recorded in the week ended Saturday, the 22nd. Atmospheric pressure was highest on Sunday, when the barometer read 30.65 inches at Christiansund, on the west coast of Norway. It afterwards gave way intermittently, falling below 30 inches very generally on Saturday. Over Spain, the Mediterranean, and Central Europe at large several shallow depressions were found, and the weather was less settled than in the North of Europe and the British Isles. Owing to the distribution of atmospheric pressure which has just been described, north-easterly winds prevailed and temperature ruled low at night. At stations also on the east coasts of both Great Britain and Ireland the weather was cool even by day. This was especially so at Shields, where in consequence of the prevalence of cloud the thermometer did not rise above 49° from Monday evening to Friday. Inland, however, the heating power of an almost unclouded sun was well marked, London in particular feeling its effect, so that the maxima there were 67° , 75° , 76° , 69° , 73° , and 68° up to Saturday. The cloud canopy which kept the N.E. of England so chilly on Tuesday, Wednesday, and Thursday, extended to the neighbourhood of Dublin on the mornings of Tuesday and Thursday, but by noon in each case the sky had cleared. At times the atmosphere was very hazy, as is usual in anticyclonic easterly winds. In Dublin the mean height of the barometer was 30.183 inches, pressure ranging from 30.456 inches at 9 a.m. of Sunday (wind, E.N.E.), to 29.881 inches at 9 p.m. of Saturday (wind, S.E.). The corrected mean temperature was 53.1° . The mean dry bulb reading at 9 a.m. and 9 p.m. was

53·2°. On Sunday the screened thermometers rose to 63·6°, on Friday they sank to 43·0°. No rain fell. The prevailing wind was N.E. At the Ordnance Survey Office, Phoenix Park, 89·1 hours of bright sunshine were recorded this week.

The week ended Saturday, the 29th, saw the disappearance of the anticyclone which had so long ruled the weather in the N.W. of Europe, and the substitution for it of low pressure areas and their accompanying unsettled, showery conditions. During Sunday and Monday bright, cool, dry weather and north-easterly winds prevailed. On Monday afternoon cirrus cloud overspread the sky from N.W., and a partial solar halo was seen in it at 6 30 p.m. This was the beginning of the change. The barometer began to fall decidedly in all districts, the change being briskest in the north, so that by Tuesday morning a well-defined V-shaped depression had formed over Scotland and the N.W. of England. In the afternoon a secondary disturbance advanced eastwards across Ireland, causing a very general though not heavy fall of rain. This disturbance was found over the S.W. of England on Wednesday morning, when the primary depression was still over Scotland with barometer readings below 29·40 inches. A more rapid fall of the barometer in the S.W. led to the formation of a cyclonic system over the south of Ireland and St. George's Channel by Thursday morning. The weather in consequence became more and more unsettled, with a tendency to thundershowers in many places. On Friday morning areas of high atmospheric pressure existed both in Lapland and over the Peninsula, while depressions covered Ireland, England, and Central Europe. In the afternoon heavy thundershowers occurred in Ireland. Saturday was a breezy, showery day: at 8 a.m. the barometer was down to 29·05 inches at Stornoway. In Dublin the mean height of the barometer was 29·579 inches, the range being from 30·037 inches at 9 a.m. of Monday (wind, N.N.E.), to 29·217 inches at 7 p.m. of Friday (wind, S.W.). The corrected mean temperature was 51·5°, the mean dry bulb reading at 9 a.m. and 9 p.m. being 51·7°. The screened thermometers fell to 40·8° on Friday and rose to 61·6° on Saturday. Rain fell on the last five days of the week to the amount of ·396 inch, ·227 inch being measured on Friday. The wind was variable.

The last two days of the month were changeable, showery and squally, but not unfavourable.

The rainfall in Dublin during the five months ending May 31st amounted to 10·693 inches on 93 days, compared with 5·971 inches on 70 days in 1896, 10·410 inches on 68 days in 1895, 12·709 inches

on 90 days in 1894, 7·908 inches on 66 days in 1893, 10·099 inches on 80 days in 1892, only 5·995 inches on 63 days in 1891, 11·483 inches on 76 days in 1890, 10·476 inches on 91 days in 1889, 9·068 inches on 69 days in 1888, 6·489 inches on 62 days in 1887, and a twenty-five years' average of 10·496 inches on 81·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 1·040 inches, distributed over 10 days—·300 inch falling on the 31st and ·210 inch on the 6th. The total fall since January 1st, 1897, equals 14·120 inches on 90 days, compared with 5·716 inches on 52 days in 1896, 12·845 inches on 58 days in 1895, 15·696 inches on 85 days in 1894, and 9·565 inches on 65 days in 1893.

The rainfall at Cloneevin, Killiney, Co. Dublin, was 0·850 inch on 10 days—0·26 inch falling on the 26th. At this station the average rainfall in May in the twelve years, 1885–1896, was 2·061 inches on 13 days. May, 1896, was a very dry month, only 0·06 inch falling on 2 days. Absolute drought prevailed from the 8th to the 24th, both inclusive. Since January 1, 1897, 11·21 inches of rain have fallen on 93 days at Cloneevin.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall in May was 0·802 inch, on 11 days, ·188 inch being measured on the 30th. Since January 1, 14·294 inches of rain have fallen at this station on 87 days. The maximum shade temperature was 62·3° on the 16th, the minimum was 35·9° on the 4th.

GALEN.

DR. JAMES FINLAYSON has printed in pamphlet form his "Two Bibliographical Demonstrations" on Galen. The fifty-five pages in which both are comprised will be read with the greatest interest and pleasure. The account of the great Pergamene's skill in diagnosis, and of the other means by which he rose to his leading position among Roman physicians, combines information with amusement in a manner not too common in professional papers.

DISTOMA HÆMATOBIUM.

DR. FREDERIC E. SONDERN, M.D., gives (*Medical News*, New York, May 1st, 1897) a case of distoma hæmatobium illustrated by a beautiful series of six micro-photographs, illustrating the embryology of the organism.

PERISCOPE.

AUSTRALIAN HOSPITALS.

THE amount of hospital accommodation in proportion to the number of population in New South Wales is somewhat large. The principal State institution is that at Little Bay, on the southern coast, near Sydney. It is intended for the accommodation of persons suffering from contagious diseases of a dangerous character, and is administered by the department of the medical adviser to the Colonial Government, the patients being charged no fees. The other Government hospitals are in connection with the Sydney military barracks, the State asylums for the insane, State asylums for the infirm and destitute, and the principal gaols. Including the Little Bay institution, there were at the end of 1895 one hundred hospitals, subsidised by the Colonial Government, open for the reception of patients, and others were in course of construction. The subsidy consists of one pound for every pound collected by the hospital, the conditions being that the hospital admits all accidents and urgent cases brought to its doors; that all destitute cases recommended by the local police magistrate or other approved officer, including the Local Government medical officer and chief local police officer, be admitted without delay; and that cases of fever, erysipelas, and other infectious diseases be admitted as well as ordinary cases, suitable provision being made for their accommodation and treatment. In Sydney, and at Auburn and Lewisham in the Sydney suburbs, there are hospitals under the care of the Sisters of Charity and the Nursing Sisters of the Little Company of Mary, of the Roman Catholic Church. The patients are not, however, limited to members of this particular denomination. These three institutions depend entirely upon public subscriptions for their maintenance, and do not receive any subsidy from the Government. A special Government grant of £1,000 was, however, made in 1892 towards the building account of a new wing at the Sydney (St. Vincent's) hospital, and a sum of £1,000 was previously received by this institution. The Thomas Walker Convalescent Hospital, on the Parramatta River, is a privately endowed hospital, not in receipt of subscriptions from the public or of subsidy from the Government. Although no recommendation is required, persons cannot be admitted without an official medical certificate, signed by one of the honorary examining or medical visiting officers of the institution. The period of sojourn

is limited to four weeks for each patient, but the medical officer may, if necessary, readmit any patient for a further period of four weeks. Persons eligible for admission are those convalescing from serious illness, or active surgical treatment, and those who have fallen into a sickly condition, and who, in the opinion of the examining medical officer, will be benefited by a few weeks' residence in the country. The Carrington Centennial Hospital, situated at Camden, 42 miles from Sydney, receives convalescent patients from the metropolitan hospitals. Government patients, sent either direct from the hospital admission depôt or from hospitals when the acute symptoms of illness have subsided, are paid for at the rate of two shillings per day. The hospital is in receipt of the usual subsidy from the State. In Sydney the office for receiving applications for admission to hospitals and asylums is under the management of the Government medical officer, who is charged with the duty of assigning the cases to the different hospitals and asylums, in accordance with the nature, severity, and special character of the ailments from which the patients are suffering, and the accommodation available at the various institutions. Preliminary inquiries are made as to the pecuniary circumstances of the applicants and their fitness in this respect for relief at the hands of the Government. Cases which, on examination, do not appear to need hospital treatment, but to be suitable for the asylums for the infirm and destitute, are recommended to those institutions. The number of applications in 1895 was 9,747. At small hospitals in the country it is a common practice to appoint married couples to manage the institutions. In such cases the wife acts as matron and the husband as wardsman. This arrangement is generally found satisfactory and economical, as the wardsman, in addition to other duties, performs those of a nurse if required. Whenever extra assistance is necessary the services of female nurses are temporarily obtained. There is in Sydney a home for trained nurses, from whence trained nurses may be engaged at fixed rates of payment and subject to certain conditions. Certificates are granted to nurses after three years' training, on passing satisfactory oral and written examinations, which are conducted by the medical staffs of the different hospitals. The medical officers attached to the Benevolent Asylum, Sydney, grant certificates in midwifery to trained nurses after having undergone, to their satisfaction, a six months' course of instruction at that institution. The Sydney Women's Hospital and Dispensary combines in its plans and objects:—A maternity hospital where poor and necessitous women can receive care and attention during their accouchement; medical and nursing aid for

poor women at their own homes during their accouchement ; medical and surgical aid for women suffering from diseases peculiar to their sex, as indoor or outdoor patients ; a training school where obstetrical nursing in all its branches may be taught and certificates of efficiency granted. In connection with the Sydney hospitals there is a "Hospital Saturday Fund," the association for the control of which is registered under the Joint Stock Companies' Acts, not for profit, but to give legal status and increase public confidence in the conduct of business. The total income for 1895-6 was £3,969, an increase of £421 on 1894-5. Both indoor and outdoor collections are made, the former taking place throughout the year and the latter once. The necessary expenditure amounted to £215. All duties, with the exception of those of the assistant secretary, are performed by volunteers. The metropolitan friendly societies, fire brigades, and other bodies, as well as those of some of the suburban and country districts, organise Sunday processions in their respective localities each year for the purpose of parading the streets and collecting subscriptions from the public for the benefit of the local hospitals. The amounts thus collected in the metropolis during 1892, 1893, 1894, and 1895 were £202, £191, £264, and £208 respectively.

COST OF MEDICAL EDUCATION IN BERLIN.

WE take the following items from the *Medical Record*, translating the amounts into our own currency:—The estimated cost of a medical education in Berlin is 2,300 marks (about £115). The fee for matriculation is 18 marks ; for examination for the medical faculty, 242 marks (£12) ; diploma fee, 440 marks (£22) ; fees for all necessary lectures, &c., 800 to 1,200 marks (£60) ; cost of printing the dissertation, about 150 marks (£9 10s.) ; and the necessary books and instruments, 500 marks (£25). Then for board, lodging, and clothes, at least 7,600 to 8,000 marks (£400) must be added, and much more if one would live in ordinary comfort.

THE JUBILEE OF ANÆSTHETIC MIDWIFERY.

DR. SIMPSON in an interesting article on the Jubilee of Anæsthetic Midwifery (*The Glasgow Medical Journal*, March, 1897) gives the following narrative of the struggle for and against the use of anæsthetics in midwifery :—Dr. Montgomery, the then chief of the great Dublin school of midwifery, wrote during the session a letter to Edinburgh in which he said, "I do not believe that anyone in Dublin has as yet used ether in midwifery ; the feeling is very strong against its use in ordinary cases, and merely to avert the

ordinary amount of pain which the Almighty has seen fit—and most wisely we cannot doubt—to allot to natural labour, and in this feeling I heartily and entirely concur.” Dr. Matthews Duncan (junior assistant to Professor Simpson) marked the following alternative reading, which well showed the absurdity of Dr. Montgomery’s train of reasoning:—“I do not believe that anyone in Dublin has as yet used a carriage in locomotion; the feeling is very strong against its use in ordinary progression, and merely to avert the ordinary amount of fatigue which the Almighty has seen fit—and most wisely we cannot doubt—to allot to natural walking, and in this feeling I heartily and entirely concur!”

JAPANESE FEET.

M. MICHAUT, the anthropologist, who has been investigating the subject, finds that the Japanese have marvellous address in the use of their feet as means of prehension. These members possess extraordinary mobility; the first metatarsal bone is separated from the second by an interval which may measure from eighteen to twenty millimetres, and the ball of the great toe may be made to touch the two adjoining toes. The Japanese rest on their knees, the feet in forced extension lying on the dorsum, inclined inward and crossed one on the other, thus forming a little bench on which the pelvis rests. All the Annamites—the Cochinese, the Tonkinese and the Annamites properly so-called—also have a remarkable separation of the great toe, amounting to from three to five millimetres, and prehension also is possible. This can not be attributed to their footwear, as might be the case with the Japanese, since the Annamites either go barefoot or wear sandals; nor to adaptation to environment, because they are inhabitants of the plains. History tells us of the kingdom of Giao-Chil, or the people of the “bifurcated toes,” who presented this ethnic peculiarity of widely separated great toes in its maximal degree, and examples are still met with—in some families the anomaly being hereditary and descending usually from father to son.—*Jour. Am. Med. Assoc.*

ALCOHOL AND GERMS.

DR. SIMS WOODHEAD says (*Medical Pioneer*, April, 1897):—“Recently there has been made a number of experiments as to the effect of alcohol on the multiplication in the bodies of animals of such organisms as the anthrax bacillus, and those that give rise to the formation of pus. These have been carried on in America, where the matter is treated on a purely scientific basis and more accurately than we in this country have been accustomed to deal

with it. The result was that the susceptibility of animals to pathogenic organisms was found to be increased. It is necessary for us applying the results of experiments to practical medicine to see how far this factor enters into the production of infectious disease in the human subject. It is notorious that the people who take cholera most easily are they who have taken alcohol, usually, of course, to excess. Dr. McLeod, of Shanghai, in a most interesting series of observations has drawn special attention to this point. Beyond this, however, we have to take into account the action of alcohol physiologically and histologically. A long series of experiments has been made in Manchester, in which animals were dosed with increasing quantities of alcohol, and it was found that following its administration there was marked fatty degeneration of most of the organs, specially of the liver and kidneys, and as the result of the administration of even small quantities of alcohol."

GLYCERINE AS AN ABORTIFACIENT.

DR. P. L. FERRARI, of Florence, contributes to *Lo Sperimentale* a paper "upon the employment of glycerine to induce labour." After a review of recorded cases he concludes: that glycerine, injected into the cavity of the uterus, with the view of producing abortion or premature labour, does not act uniformly, either as to the time in which the pains begin, or as to the intensity or the duration of the uterine contractions; that the use of glycerine in this manner is dangerous, through changes produced in the blood and in the kidneys, and is contra-indicated when morbid conditions of these are known or suspected; that the glycerine may be injurious and even fatal to the foetus.

ETHER ANÆSTHESIA.

AN interesting discussion on this subject recently occupied the Paris *Société de Chirurgie*. M. Poncet (of Lyon) spoke from an experience of 25,000 cases. He stated that published statistics showed that the accidents which follow anæsthesia by ether have always been less serious and less frequent than those resulting from chloroform. The Berlin figures gave an average of one death in 6,000 cases of administration of ether, one in 3,000 of chloroform. The experience of Swiss, American, French, and German surgeons, he said, proved the uncontestable superiority of ether. There are certain contra-indications. Up to the age of 14 or 15 years chloroform is to be preferred, and in cases of catarrh or emphysema of aged patients. Again, he cautioned his audience against the use of ether at night, in a small room, on account of the inflammability of the vapour. M. Lucas-

Championnière admitted a weakness for chloroform ; mentioned the greater inconvenience of ether *to the operator*—which in his own case invariably caused two days' coughing. However, he concluded by acknowledging, "*avec tout le monde*," that there is less risk in the use of ether, and that its elimination from the system is more rapid.

CRANIOTOMY IN MICROCEPHALUS.

DR. CARL BECK, of Chicago, in a lecture published in the *Journal of the American Medical Association*, discusses the results of operative treatment of microcephalus. They are not encouraging. He has collected 70 published cases, mostly from France, and America—Germany, Italy, and Spain contributing only one case each. He divides them into six categories, as follows:—Perfect and lasting improvement, 16 ; perfect improvement but stationary for some time after operation, 4 ; slight improvement, but good prospects, 1 ; no improvement, 1 ; condition worse than before, 11 ; results unknown or reported too early, 27.

CHOREA.

DR. W. B. PRITCHARD (*Medical News*, New York, LXIX., 9), analysing 125 cases of chorea, and comparing his results with those of other observers, comes to the following conclusions:—

1. Chorea is more common in females, in the proportion of two to one, than in males.

2. The disease is more prevalent in the spring months than at any other season of the year.

3. A neurotic heredity is of unquestionable importance as an ætiological factor.

4. The disease seems to be especially liable to development in the unusually intelligent and precocious. Mental deterioration or perversion occurs only as a result (as a rule) of relapses of the disease.

5. Chorea may occur independently of either heart disease or rheumatism, but the frequency with which the three are found to be present in association is more than a coincidence. Further study is necessary before any positive conclusion can be reached as to the exact significance of this relationship.

WEST LONDON MEDICAL JOURNAL.

WE have received the first number of this quarterly, published "under the auspices of the West London Medico-Chirurgical Society." It promises well. We desire to notice specially a paper—"Remarks upon Gastric Ulceration"—by Dr. Donald W.

C. Hood, of the West London Hospital. "Perforating ulcer of the stomach," he says, "is as often met with among males as among females." "Gastric ulcer," he quotes from Dr. Pye Smith, "though no doubt common in young women, is also common among men of all ages." Of 191 cases examined *post mortem*, 59 were men, 42 women. Of 16 cases of peritonitis from perforating gastric ulcer, admitted to Guy's Hospital in twenty years (1870-90), the sexes were equally divided.

CREMATION IN THE UNITED STATES.

THE American Public Health Association appointed a committee to report on the disposal of the dead. The Report was read at the Denver meeting in October of last year. From it we learn that the first crematory in the United States was opened in Washington, Pennsylvania, in 1876. There are now nineteen crematories working—5 in New York, 4 in Pennsylvania, 3 in California, 1 each in Ohio, Michigan, Missouri, Maryland, Iowa, Illinois, and Massachusetts. 4,289 bodies had been cremated at the date of the Report. The cost ranges from £5 to £12.

BERLIN DRAINAGE.

CONCURRENTLY with the draining of Berlin the death-rate has fallen from 32·9 to 19·4 per 1,000 of the population, a rate that indicates that Berlin, of all the million-souled cities of the civilised world, in 1895 touched low water mark in respect of a sanitarily depleted mortality. Roughly computed this same low rate implies a gain in life-saving of between eight and nine thousand lives; or, in other words, had the rate of twenty years ago prevailed in 1895 a sacrifice of not less than 8,500 lives would have resulted over and above the actual death-toll. Or, again, if a human life be appraised as worth to the State the average sum of \$700, as the computation of some authorities is, Berlin was the gainer by not far from six millions of dollars in the year 1895.—*Journ. Am. Med. Assoc.*

MEDICAL JOURNALS IN U.S.

A NEWSPAPER catalogue recently published by an advertising house in this city (New York) contains some interesting points in relation to the medical journals published in North America. According to this most recent authority, the medical profession of this country supports, directly or indirectly, 275 periodicals, of which 10 are issued weekly, 11 semi-monthly, 225 monthly, 6 bi-monthly, and 23 quarterly, with a combined yearly circulation of 16,017,200 copies.—*Med. Rec.*

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Palatinoids of Duodenin.

THIS preparation contains the excretion from the glandular system of the duodenum. It contains various enzymes that are similar to steapsin, trypsin, and amylopsin of the pancreas. It would apparently be of benefit in promoting the assimilation of proteid matter, farinaceous foods, and fats. Duodenin palatinoids have been prepared by Messrs. Oppenheimer, Son & Co., Manufacturing Chemists, of 14 Worship-street, London, E.C. They are dispensed in neat bottles. Each palatinoid contains 5 grains of the excretion from the duodenal glands.

"Ambrosia."

MESSRS. EVANS, GADD & CO., Fore-street, Exeter, have submitted to our notice a sample of a new preparation of cream and malt to which they have given the name "Ambrosia." Probably this appellation has been chosen, not so much to signify that the preparation is "food for the gods," as to convey that it is a "divine restorative"—a sense in which the word *ἀμβροσία* is used by Homer in the Iliad (Book V., line 777).

"Ambrosia," we are told, contains 25 per cent. by weight of the richest Devonshire cream, combined with a malt extract of very high diastatic power. It can scarcely fail, therefore, to prove of great nutritive value. Its extreme palatability at the same time makes it especially suitable for such children and delicate persons as cannot tolerate cod-liver oil. "Ambrosia" may be obtained of nearly all chemists. It is put up in carefully stoppered bottles, the retail price of each of which is half-a-crown.

Ichthyol Palatinoids.

MESSRS. OPPENHEIMER, SON & CO., 14 Worship-street, London, E.C., have sent us a specimen of their ichthyol palatinoids. These have been suggested by a number of leading medical authorities, the drug being of such a disagreeable character as to excite repugnance with many of their patients, and they consider it a great advantage to be able to administer the ichthyol in the tasteless form of palatinoids. Many patients unable to swallow pills or to take mixtures of this otherwise nauseating drug, can swallow palatinoids with ease. Each palatinoid contains three grains of ichthyol (sulpho-ichthyolate of ammonium). The dose is one palatinoid as often as directed by the physician.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

AUGUST 2, 1897.

PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*On the Mechanism by which the First Sound of the Heart is Produced.*^a By SIR RICHARD QUAIN, Bart., M.D., F.R.S.

It is a well-recognised fact that the action of the heart is accompanied by the emission of certain sounds, which are described as the first and second sounds of the heart. These sounds, which were observed soon after Laennec had discovered the use of the stethoscope, have been compared to the sounds produced by the utterance of the words *lubb-dŭp*. They have been studied with interest by the physicist, the biologist, the pathologist, and the clinical physician, by the last especially, inasmuch as the changes produced by disease in the character of these sounds become of material assistance in the diagnosis and treatment of diseases of the heart. An explanation of the mechanism by which phenomena so distinct, so constant, and so remarkable are produced, has been sought for by many observers amongst the classes just mentioned.

The *second sound* is the result of the sudden tension of the semilunar valves, caused by the resistance which these valves offer to the retrograde flow of the blood from the aorta and pulmonary artery respectively into the ventricles on the cessation of systole. The sound is similar to that pro-

^a Read before the Royal Society, June 3, 1897.

duced when a piece of tape or ribbon is suddenly made tense. It is needless to say more here on the subject of the second sound and its causes, for the explanation just offered is, I believe, almost universally accepted.

The cause of the *first sound* is, on the contrary, still a subject much discussed and undecided. Many explanations have been offered at various times of this phenomenon. Professor Michael Foster, to whose admirable exposition of the mechanism of the circulation I am deeply indebted for guidance in working out the subject of this communication, observes that "this sound presents many difficulties in the way of a complete explanation."^a The difficulties result from the number of events which occur simultaneously with the systole of the ventricle and the occurrence of the sound. It seemed to me to be desirable, amidst such differences of opinion, to solve if possible a problem which has its special interest and its special importance. Two of the most striking events which take place during systole—namely, the closure of the auriculo-ventricular valves and the muscular contraction of the ventricular walls—are regarded by many authorities as the sources from whence the first sound proceeds. The result of my investigations, on the one hand, leads me to the conclusion that neither of these explanations is satisfactory; and, on the other hand, enables me to indicate what I believe to be the real explanation of the phenomenon.^b

(A.) THE ACTION OF THE AURICULO-VENTRICULAR VALVES IS NOT THE SOURCE OF THE FIRST SOUND OF THE HEART.

The mechanism of these valves (the mitral and tricuspid) and their action do not possess the elements necessary for the production of such a sound. The action of the valves commences when the blood, pressed from behind by the contraction of the auricles, flows into the ventricles. It is there reflected from the walls of these cavities, and presses on the lamellæ of the valves, which are thus brought face to face into close apposition, and are so far closed by the mere pressure of the blood from behind. As soon as the ventricles are

^a Text-book of Physiology. 6th Ed. (London, 1893), p. 239.

^b I have to acknowledge with thanks the assistance rendered me in arranging my notes of this memoir by my valued friend, Dr. Mitchell Bruce, during my recent severe indisposition.

filled with blood the systole commences. The apex of the heart approaches the base. At the same time the muscoli papillares contract, and by means of the chordæ tendineæ, attached to the margin of the valves, prevent the laminae of the valves and the blood from being pressed backwards into the auricles. In this action—the simple apposition of the laminae of the valves, and the closure of the orifices by means of the muscoli papillares and chordæ tendineæ—there is no such tensive force exercised as would be sufficient to produce the loud and characteristic first sound of the heart.

Further evidence on this point may be found in another direction—namely, in the fact that the first sound can be heard independently of the existence and action of mitral and tricuspid valves. Aware of the fact that in some of the lower animals, more especially in the reptile class, the auriculo-ventricular valves exist in but a very rudimentary form, I obtained permission to examine some of these creatures in the Zoological Gardens, and spent many hours on many occasions in the investigation, assisted by my valued friend, Dr. John Sibbald, who was at that time my Clinical Assistant at the Brompton Hospital, and who is now Senior Commissioner in Lunacy in Scotland. Having examined many animals, we finally decided that the python (*Python solurus*) afforded the best illustration of the occurrence of the first and second sounds of the heart. In the heart of that animal, of which I present two drawings, copied by permission from a preparation in the Hunterian Museum, it will be seen that the structures which represent the auriculo-ventricular valves are formed by a continuation of the septum of the auricles; they are merely muscular flaps, destitute alike of muscoli papillares and chordæ tendineæ, and are without means of producing valvular tension. I may here add that in an animal of a totally different class—namely, the kangaroo—the sounds were distinctly recognised, though the valves, as seen in the second drawing (copied also by permission from a specimen in the Hunterian Museum), are very rudimentary in character.

Objections will no doubt suggest themselves to the view above expressed. For example, the clinical physician will say, “I am in the daily habit of hearing a distinct murmur accompanying the systole in cases of diseased heart, and

apparently replacing the first sound. On examining the heart after death I find the auriculo-ventricular valves diseased, a condition with which I therefore connect the murmur." It will at once be seen that we have here to deal with morbid sounds totally different in character, and totally different in the seat and mode of production, from the first sound of the heart. To make the explanation more simple, I will confine my observations to two principal forms of mitral disease associated with systolic murmur—namely, first, imperfection in structure with distinct regurgitation, and, secondly, induration, roughness, and irregularities on the mitral valve.

(a) In mitral regurgitation consequent on disease affecting the margins of the valves, the auriculo-ventricular orifice remains imperfectly closed; and when systole of the ventricle takes place, a portion of the blood is driven backwards towards the auricle, the remaining portion being sent forwards in its normal course towards the orifice of the aorta. The murmur which is produced by the retrograde flow of blood, permitted by the diseased valve, is heard at the apex of the heart; but at the same time the healthy first sound may almost always be recognised at the base of the heart, over the aortic valves.

(b) In a second form of disease of the mitral valve, there may be roughness, induration, or other irregularities from the presence of deposits on the external surface of the laminae which meet the current of blood going towards the aorta and flowing parallel with the surface of the valves. A murmur is there produced audible at the apex, but also accompanying the current of blood towards the base, where it can be heard, often masking by its loudness the first sound. It is quite remarkable how slight the roughness or irregularity may be on the laminae of the valves which produces a loud and definite murmur. These murmurs, striking and characteristic as they are, are merely accidental complications which occur at the moment of the systole of the heart, but they are unconnected with, and have no relation except in point of time to, the healthy first sound, which may be heard apart from, and independently of, them.

The weight of evidence, then, is clearly against the possibility of the structure or the functions of the auriculo-ven-

tricular valves being the source from whence proceeds the first sound of the heart.

Two other phenomena occur synchronously with the systole of the heart, and consequently with the occurrence of the first sound. They are—(a) *the contraction of the muscular walls* of the ventricles, and (b) *the propulsion and movement of the blood* from the ventricles into the arteries. I shall first consider the supposed share which muscular contraction has in the formation of the sound.

(B.) THE MUSCULAR CONTRACTION OF THE WALLS OF THE HEART DURING SYSTOLE IS NOT THE SOURCE OF THE FIRST SOUND OF THE HEART.

The sound produced by muscle during its contraction was first described by Dr. Wollaston.^a He compared it to “a sound which resembles most nearly that of carriages at a very great distance passing rapidly over a rough pavement.”^b It is very difficult to conceive the slight, soft, rolling sound produced by muscle in action being convertible into the loud, booming first sound of the heart. Yet the theory is accepted. If muscle during contraction could produce so marked a sound, we should expect to find that the powerful muscles of the neck attached to the base of the skull and those attached to the jaw (being through the bones of the skull in direct relation with the hearing apparatus) would give us some striking evidence of the production of muscular sounds when they are thrown into strong action. It is reasonable, too, to believe that such muscular sounds must occur and be heard, if they exist, during the movements of the athlete or the boxer as well as during the performances of the danseuse. But there is nothing of the kind. I have failed to hear such sounds when listening to the powerful contraction of the biceps, or on listening to the contraction of the shoulder muscles of a strong cart-horse struggling with a heavy load in ascending a hill. I could hear no other sound save the soft, rolling sound de-

^a Philosophical Transactions, 1810.

^b It is interesting to note that Dr. Wollaston, in examining the sound produced by the muscles of his leg, made use of a wooden rod to convey the sound to his ear. He may be thus said, in a measure, to have anticipated the principle of mediate auscultation discovered by Laennec in 1816. The muscular sound which we now recognise is that accurately described by Wollaston.

scribed by Dr. Wollaston. Still many observers have argued that the contraction of the walls of the heart differs from the action of the skeletal muscles, and that it is this peculiar form of contraction which causes the first sound. They have adduced so many observations in favour of this doctrine that it will be necessary to examine them. But before doing so, for the sake of making my argument more clear, I desire to point out that there is another event which occurs simultaneously with the systole of the ventricle. This is the propulsion of the blood from the ventricles and its impact against the column of blood resting on the semi-lunar valves.

With a view to showing how large a share the sound of muscular contraction has in producing the first sound, observers have cut off altogether the supply of blood from the cavities, and on listening during the contraction of the heart have heard a systolic sound. Such were the old experiments of Ludwig and Dogiel, represented as confirmed by Krehl^a and by Kasem-Beck.^b

The conclusions which have been drawn from these experiments are disproved by those conducted by my friend Professor Halford, and described in his essay on "The Action and Sounds of the Heart," published by Churchill (1860). He writes: "Large dogs were obtained, and, as in my preceding experiments, the heart was exposed, and the circulation kept up by artificial respiration. A stethoscope being applied to the organ, sounds were distinctly heard. The superior and inferior venæ cavæ were now compressed with a bull-dog forceps, and the pulmonary veins by the finger and thumb; the heart continuing its action, a stethoscope was again applied, and neither first nor second sound was heard. After a short space of time the veins were allowed to pour their contents into both sides of the heart, and both sounds were instantly reproduced. On the veins being again pressed, all sound was extinguished, notwithstanding that the heart contracted vigorously. Blood was again let in, and both sounds restored. I have thus frequently interrogated the same heart for upwards of an hour, and always with the like result" (p. 25).

^a Du Bois-Reymond's Archiv, 1889, p. 253.

^b Pflüger's Archiv. Vol. 47, p. 53.

These experiments of Professor Halford must be accepted as sufficient to refute the view of the German observers just quoted. Another source of fallacy in making experiments of this kind is that a very slight stroke of the muscle or ventricle against the end of the stethoscope is sufficient to produce a very loud and distinct sound, resembling the first sound. If the palm of the hand, for instance, be pressed gently over the ear, and the back of the hand be touched by a finger of the opposite hand, it will be felt how slight a stroke is sufficient to produce a very distinct sound. Observers (Ludwig and Dogiel) have recognised the difficulty of isolating muscle from the instrument conveying the sound, and they have placed the empty heart, still contracting, in a jar containing defibrinised blood or warm water, from the side of which a neck is projected, covered by a thin layer of India-rubber. At each contraction of the heart a distinct sound, resembling the first sound of the heart, was heard. But the flapping of the heart against the water was quite sufficient to produce the sound which was conveyed to the ear; and I cannot see in such an experiment sufficient evidence of the sound of muscular contraction being the cause of the first sound of the heart.

Experiments of another kind have been employed to show that the contraction of the muscle is a source of the sound. Hürthle^a and Einthoven^b show graphically that the first sound begins with the very beginning of the systole, before the ventricle has got power "to open the valves." This observation is entirely consistent with the view I am about to propose. The moment the ventricle begins to contract the impact of the blood against the semilunar valves commences, producing the commencement of the sound, not when the valves are thrown open. The valves being connected with the fibroid ring surrounding the base of the heart, with which also the muscular walls are continuous, the sounds are conducted to the apex.

Pathology confirms this view. It was observed by Dr. Stokes that in the course of typhus fever the first sound of the heart gradually disappears. After death it is found that the walls of the heart are softened; and this morbid state

^a Ibid. Vol. 60, p. 263.

^b Ibid. Vol. 57, p. 617.

has been accepted as a proof that muscular contraction is the cause of the first sound. The real explanation is that the impulse of the heart is so feeble that it is unable to produce the sound at the valves. The correctness of this view is confirmed by the fact, recorded by Dr. Stokes, that the last point at which the sound disappears is over these valves, and that it is at the same point that the returning sound is first heard.

With the object in view of further investigating this subject, I requested my friend, Dr. Alexander Morison, to study the heart of a turtle, recently killed, by holding it close to the ear as one holds a watch when testing for deafness, and also by pressing it gently against the ear. With this intention I gave him an introduction to the proprietors of the "Ship and Turtle" tavern, where he had the fullest opportunity of carrying out the investigation.

Dr. Morison writes to me:—"An opportunity was afforded me of examining the hearts of two large turtles immediately after they were killed. The heart removed from the body was easily provoked into active contraction by a gentle tap with the finger, the contraction being sufficient to expel blood from the cardiac cavity. On placing the ear close to the heart whilst thus contracting, no sound could be heard; on placing the ear lightly on the heart whilst contracting, no sound could be heard. So far, therefore, as a turtle's heart is concerned—no other that I know of has more vigour of contraction after removal from the body—muscular contraction, as a cause of cardiac sound, must be excluded."

These facts and observations are, in my opinion, sufficient to prove that the contractile action of the muscles of the heart is not capable of producing the first sound of the heart.

Having thus endeavoured to show that the cause of the first sound is independent alike of auriculo-ventricular action and of muscular contraction of the walls of the heart, I proceed to consider a third event, the most striking and important of all those which occur during the systole of the heart—that is, the propulsion of the blood contained in the ventricles into the pulmonary artery and the aorta, and herein to indicate what seems to me to be the agency by which the sound is produced.

(C.) THE FIRST SOUND OF THE HEART IS CAUSED BY THE IMPACT OF THE BLOOD DRIVEN BY THE ACTION OF THE MUSCULAR WALLS OF THE VENTRICLES AGAINST THE BLOCK PRODUCED BY THE COLUMNS OF BLOOD IN THE PULMONARY ARTERY AND AORTA WHICH PRESS UPON THE SEMILUNAR VALVES.

I would adopt the explanation suggested by my valued friend, the late Dr. C. J. B. Williams, that "sound is a phenomenon resulting from resisted motion." We hear it in the whistling of the wind in the rigging of a ship; we hear it when the waves break upon the shore; we hear it when the blacksmith strikes the anvil with his sledge-hammer; we hear it in the gentle sounds of the *Æolian* harp, and in the whispers emitted by the vocal chords when the air passes over them from the trachea. Let us examine the condition of the circulation with regard to this particular point—namely, resisted motion.

In this inquiry I have derived most important assistance from the admirable and elaborate researches of Professor Bell Pettigrew, F.R.S., first, on "The Arrangement of the Muscular Fibres in the Ventricles of the Vertebrate Heart," published in the "Transactions" of the Royal Society, 1864; and secondly, on "The Relations, Structure, and Functions of the Valves of the Vascular System," published in the "Transactions" of the Royal Society of Edinburgh, 1864. These refer especially to the left ventricle, but, at the same time, it is to be observed that what applies to this ventricle applies, only in a lesser degree, to the right ventricle. Dr. Pettigrew explains the manner in which the column of blood, projected from the heart into the aorta, is formed by the union of three columns, an arrangement which results from the mechanism of the heart as fully described by him. These columns ultimately unite into one before reaching the orifice of the aorta. The columns have a spiral motion, which is the result of the spiral arrangement of the *musculi papillares*, of the spiral arrangement of the fibres composing the walls of the ventricle, as well as of the spiral shape of left ventricular cavity itself. These points, illustrating the character of the flow of the current, are shown in the blood-cast from the interior of the left ventricle of a horse which, by permission of the President of the Royal College of Surgeons, I am able to submit to your examination.

By this spiral, or what might be called "rifle," motion the blood is seen to be directed against the segments of the semilunar valves, which are thereby hastily thrown apart, the spiral current being continued for some distance within the aorta. The beautiful rifle mechanism here described is constructed with the definite objects of giving precision to the direction of the moving body against a given point, and of securing greater velocity and force in that body—the moving column of blood. We have, in fact, here represented in nature—a matter of the deepest interest to the biologist—the mechanism of the comparatively modern rifle.

The resistance to the stream of blood issuing from the ventricle is offered by the block formed by the column of blood resting on the aortic valves. These in their action are described by Dr. Pettigrew as "closed by a spiral movement, by which these valves are wedged, and, as it were, screwed, more and more tightly into each other;" the movement here—the spiral movement—being caused by "the direction of the sinuses of Valsalva, which curve towards each other and direct the blood in spiral waves upon the mesial line of each segment."^a

We find that various estimates have been given of the absolute propelling power of the ventricles and of the resistance of the column in the pulmonary artery and in the aorta respectively. For example, Professor Michael Foster says:—"If we take 180 grams as the quantity in man ejected at each stroke at a pressure of 3.21 metres of blood, this means that the left ventricle is capable at its systole of lifting 180 grams 3.21 metres high—i.e., it does 578 gram-metres of work at each beat."^b

Different estimates of the propelling force are given by

^a Transactions of the Royal Society of Edinburgh. Vol. 23.

^b As an illustration of the great mechanical force exercised by the muscular walls of the heart, Professor Michael Foster says that "the work of the whole heart during the day would amount to 75,000 kilogram metres, which is just about the amount of work done in the ascent of Snowdon by a tolerably healthy heavy man" (Text-book of Physiology, by M. Foster, M.A., M.D., London, 1893).

Professor Houghton, F.R.S., in his learned and most interesting work on "The Principles of Animal Mechanics," says that "the daily work of the left ventricle is equivalent to lifting 89.7 tons through 1 foot" (Longmans, London, 1873).

physiologists, and the estimates of the resistance vary more even than the estimates of the propelling power. It will therefore suffice to say that authorities are substantially agreed that the driving power and the resistance are in the proportion of 4 to 3, the really important point for our present purpose being the relation they bear to each other.

In the motion thus described and the resistance we have all the elements for the production of a sound; and a sound being produced, we ask what it is. The reply must be—the first sound of the heart, the cause of which we now seek.

If it be admitted that sound is a result of resisted motion, we have in this instance a remarkable illustration of movement and resistance. The movement of the blood with all the force, precision, and velocity of a rifle or spiral movement, is directed against a fixed and definite resistance, the moving power and the resistance being capable of definite measurement and found to be quite sufficient themselves to explain the source of the sound of which we are in search. This explanation was first suggested to my mind many years ago by the occurrence of a case of disease in which the aortic valves, being completely broken down by disease, became inadequate to their function. A murmur of such intensity was produced that it was audible at 2 or 3 inches from the wall of the chest without any intermediate communicating body. With a view to determine how far this murmur might be conducted along the course of the circulation, I examined the femoral artery. There I found that the murmur was not conveyed to the ear, but a sound precisely resembling the first sound was heard, a sound caused by the pressure of the stethoscope resisting the motion of the blood in the artery, which, the valves being destroyed, thus received the full force of the ventricular contraction. My attention was thereby directed to the obstruction offered by the aortic valves in health to the blood in leaving the ventricle. I felt the case to be so interesting that I submitted it to a meeting of the Harveian Society; and my observation is recorded in the Minutes of the meeting, April, 1852.

From that time to the present I have taken every opportunity of investigating the subject. Observations have been

made on the course of the circulation in the femoral artery under like circumstances by Duroziez, Moulie, von Bamberger, and others. These observations, however, have had reference more especially to the diagnosis of disease of the aortic valves, and I mention them here only as indicative of interesting investigations having been made on the femoral artery in cases of diseased aortic valves. The observers named make no special reference to the first sound of the heart in health.

Objections may be offered to the explanation of the first sound of the heart here brought forward, founded on the fact that this sound is heard more distinctly at the apex of the organ, a point removed from the seat of the valves. The observation is perfectly correct, but the explanation is simple. The muscular walls of the heart are connected, as above described, with the fibroid ring which is intimately associated with the semilunar valves. The sound produced at these valves is communicated to the apex of the heart through the fibroid ring, and the muscular walls, which at the moment of systole are tense and firm. The sound thus conducted reaches that portion of the heart which is uncovered, and which is in contact with the walls of the chest. But, on the other hand, when opportunity offers it has been found that the sound in question is heard over the aortic valves more distinctly than in any other situation. A remarkable case of this kind has been related by M. Cruveilhier, who was invited to see an infant just born presenting a complete case of ectopia of the heart. He says, "On examining the heart thus exposed, both sounds were distinctly heard over the base, and not at the apex." He remarks, "We must not forget that one element of the sound—that produced by the shock of the heart against the chest-wall—is absent."^a

Another point of interest is that which has already been alluded to in the case of typhus fever, as described by Dr. Stokes—namely, that the sound disappears last over the semilunar valves, and also that the returning sound is first heard in the same situation.

It is also an object of great interest to compare the cha-

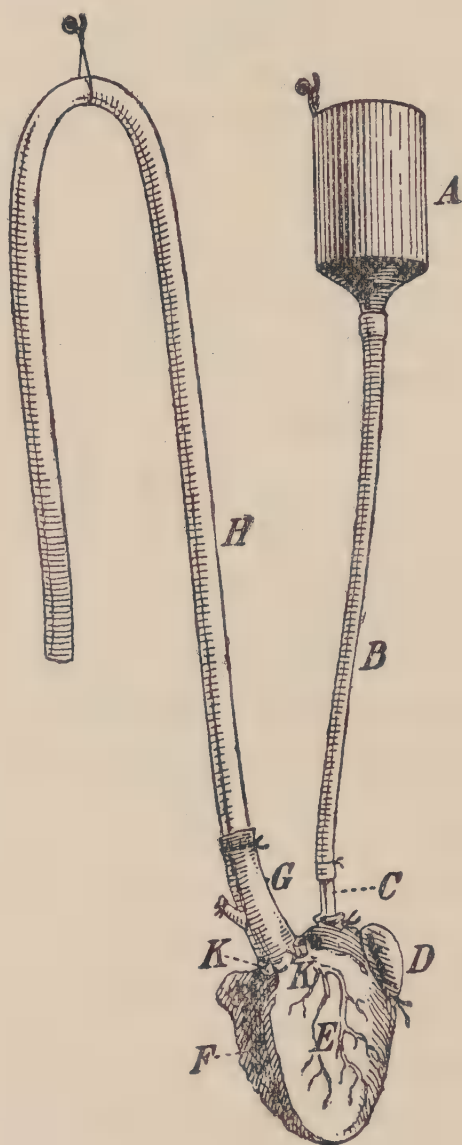
^a *Gazette Médicale.* P. 488 (1841).

racters of the two sounds in relation to the seat of their origin at the semilunar valves. In the first sound we have the character of propulsive force and sustained action, softer and more prolonged than the second sound, which is sudden, sharp, and short, as if produced by an abrupt mechanical disturbance. These distinctions, which may be readily recognised in various degrees by careful observation, serve to convince us that the sounds are both produced at the same point—at the semilunar valves, each by its own single and simple agency.

(D.) LASTLY, SOUNDS RESEMBLING THE FIRST (AND SECOND) SOUND OF THE HEART CAN BE PRODUCED ARTIFICIALLY IN ACCORDANCE WITH THE VIEW CONTAINED IN THE PRECEDING COMMUNICATION.

The experiment is thus made—A sheep's heart of good size (or that of a calf) may be used. It must be carefully cleared from pericardium, leaving the large vessels and pulmonary veins as far as possible intact. The orifices of the pulmonary veins must be laid into one, so as to permit a sufficient opening into the left auricle through which to divide the attachments of the mitral cusps and the muscoli papillares in the left ventricle, taking care in doing this not to injure the aortic segments when detaching the cusp that lies next them. The coronary artery must next be ligatured, and also the innominate artery where it springs from the aortic arch. The right auricle and ventricle should be removed. Through the opening made, by laying into one of the orifices of the pulmonary veins, a bone nozzle should be passed. It is well also to ligature the auricular appendix and any points from which water may issue when the ventricle is filled. To the posterior orifice of the nozzle rubber tubing should be attached, communicating with a source of water supply, placed on a higher level; and another portion of rigid gutta-percha tubing, about 3 feet long, should be introduced into the aorta (see diagram). If now the ventricle be filled with water by means of the tube in the left auricle, the water will of course pass into the ventricle and thence up the aorta, a portion of the water resting upon and closing the aortic sigmoid valves.

DIAGRAM TO ILLUSTRATE SIR RICHARD QUAIN'S THEORY OF THE MECHANISM
CAUSING THE FIRST SOUND OF THE HEART.



- A. Receptacle for water supply connected by means of tubing B with bone nozzle C tied into the left auricle.
- D. The left auricular appendix ligatured after escape of all air from the heart chambers.
- E. The left ventricle of the heart.
- F. The site of the right chambers of the heart which were removed after ligature of the coronary arteries KK.
- H. Tubing connected with the aorta G and containing water representing the aortic column of blood.

If, further, the ventricle be compressed periodically in imitation of systolic contraction, and allowed to relax in imitation of diastolic relaxation, a sound closely resembling the first sound of the heart will be produced when water is propelled from the ventricle into the aorta, and another closely resembling the second sound when propulsive movement ceases, and the sigmoid valves again close under the superincumbent weight of water in the aortic tubing. As the fluid rises in the gutta-percha tube, the pressure on the valves increases, and the sound becomes more marked; when the fluid, on the other hand, diminishes, the sounds become less distinct. If the heart be placed horizontally, the sounds become wobbly. The terminal piece, of small diameter, of a binaural stethoscope gently placed over the aorta at its commencement is most suitable for observing the cardiac sounds in this experiment.

The experiment here described, when first suggested by me, was submitted, with the assistance of Dr. Sibbald, to my lamented friend, the late Dr. Sharpey, and to Sir James Paget, who were quite satisfied that with the increase or diminution of the column the sounds closely resembled those of the heart in man, and that they became more or less distinct in proportion to the quantity of fluid contained in the tube.

In conclusion, I may say that I was moved to undertake and continue this inquiry by a desire to obtain a solution of what seemed to be an insoluble problem, and also by a belief that a correct explanation of the cause of the first sound of the heart would be of practical value in the study of the clinical phenomena of diseases of this organ.

I would wish further to add that the explanation of the cause of the first sound of the heart given in this communication, being so different from that hitherto accepted, may seem calculated to create difficulties in the diagnosis of valvular diseases of the heart. Closer consideration will show, however, this not to be the case, but that, like all accurate knowledge, it will be found to simplify, and not to confuse. It will afford an explanation of the relations of certain morbid phenomena which are at present unintelligible, such, for example, as that a systolic murmur may be

heard at the apex whilst the first sound is audible at the base free from murmur; and it will serve to encourage a closer study of the relation between muscular contraction of the walls of the heart and the tension of the vessels of the system.

ART. VI.—*Clinical Pictures of Children's Diseases.* By LANGFORD SYMES, M.R.C.P.I., &c.; late Clinical Assistant, Deputy Medical Registrar and Pathologist, Hospital for Sick Children, Great Ormond-street, London.

(Continued from page 31.)

VII. "GASTRIC ATTACKS" OR TOXIC GASTRITIS (FOOD POISONING).

Gastric disorder—Acute gastric catarrh—Acute indigestion—"Embarras gastrique"—Biliousness—"Status gastricus"—"Status saburralis" or saburral condition—Gastric fever—Ptomain poisoning—Gastro-adenitis—Acute dyspepsia—Gastric dyspepsia of older children—Surfeit—Cyclical or periodic vomiting—Recurrent catarrh.

Is there such a disorder in children as "gastric attack?" For many generations practitioners have sought refuge in this phrase. Experience shows they were not wrong. It undoubtedly exists as an alarming condition variously described as above. Moreover, it is very frequent. Almost every practitioner sees cases of it which at first he cannot diagnosticate. Also it cannot be classified according to the routine diseases of adults. There are few more puzzling conditions in children. They are abdominal cases simulating organic cerebral mischief, or specific fevers. It occurs after errors in feeding. It is a chief cause of much of the haziness and uncertainty and obscurity of some men's knowledge of children's diseases. The child becoming suddenly alarmingly ill to-day, with, perhaps, many symptoms of profound organic nervous or febrile disease, and quickly changing or recovering in 48 hours, remains almost an enigma to the physician. Its presence is only inferable from symptoms. It is said to be slightly more common in spring. Previous attacks are frequent. It is most erratic in its course and duration. It is believed to be an acute inflammation of the glands of the stomach due to irritating food. The symptoms to one suggest acute

dyspepsia, to another "gastric fever," to another dentition fever, while to a fourth it may be put down as an enteric, cerebral, or eruptive febrile disease.

Every time the stomach is overloaded with food, especially if indigestible and unsuitable, a speedy natural cure may take place by spontaneous vomiting or diarrhœa. When this does *not* take place the "gastric attack" develops into a "status gastricus sive saburrâlis," a condition of whose nature we know practically nothing in spite of its frequency. ■

What the actual condition is we do not know. Its causes are practically always dietetic. The healthiest children may get it. It should never be put down to "cold," for definite demonstrable dietetic causes are always found, and poisonous decomposition of indigestible food is its main origin. It often follows the eating of tinned meats, tinned vegetables; excessive eating of fruits, cakes, or sweets between meals; bad fish, game, putrid meat, mushrooms, sausages, mussels, tainted milk, pickles, apples, nuts, almonds, fat pork, mackerel, crab, cucumbers, sauces or highly-spiced dishes—or overeating of any kind.

Dr. Soltau Fenwick has observed a lack of hydrochloric acid in the contents of the stomach, leading to micro-organic fermentation and formation of organic acids.

Some elaborate investigators actually describe four or five varieties.

All that is necessary, however, is to distinctly recollect that it may occur **WITH OR WITHOUT HIGH FEVER**, and may present almost any known symptom.

Selecting the most likely and frequent signs we observe, perhaps, a full-grown child prostrated on its mother's lap by the following urgent and puzzling symptoms, which have suddenly come on:—

1. *Headache.*
2. *Vomiting.*
3. *Confined Bowels.*
4. *Collapse, drowsiness, and apathy.* It may be almost comatose; unable to raise its head; stupefied or partially insensible; cold sweat and weak pulse from cardiac failure.
5. *Delirium*—"night-mare" or bad dreams at night.

■ Professor Henoeh.

6. *Tongue* red and creamy, thickly coated with a yellow felt-like fur.

7. *Swollen, tender belly*, with abdominal discomfort. Then high fever, anorexia, restlessness, or pain, offensive breath, great thirst, perhaps convulsions, or other reflex nervous symptoms combine to form the most alarming picture of what may only be a surfeit or "toxic gastritis" from food poisoning, instead of some gross organic disease.

The most valuable guide is its *sudden onset after food*.

The diagnosis is most difficult. Indigestion does not occur to us at first, for we think it too trivial to produce such alarming symptoms, and one's certainty of opinion is interfered with by the haunting fear that typhoid fever or tubercular meningitis may be brewing. The conditions which confound us in these cases are:—

1. *Tubercular meningitis* in the comatose stage, but this will be known by—

Ocular paralysis,
True and deeper coma,
Tense bulging fontanelle,
Retraction or rigidity—

all of which are absent in food poisoning.

2. *Intussusception* will produce similar symptoms, but search should be made for an obscure tumour in the abdomen, mucoid bloody stools, and the rectum should be examined.
3. *Enteric fever* is much more insidious, has less fever, enlarged spleen, less headache, is less sudden, and while lasting a long time has a much milder train of symptoms
4. *Eruptive fevers* (especially *scarlatina*) will develop their signs in 48 hours, while *tonsillitis* or *diphtheria* is excluded by a careful examination.

There is one comfort, in any case—viz., the prompt use of AN EMETIC. This is the first and best treatment for this condition, while if the diagnosis is mistaken it cannot have any ill effect in the early stages of meningitis or typhoid.

The pathology was hitherto obscure. It is now believed that inflammation of the glands of the stomach exists, also implicating the interstitial tissue, but distension from gases

and toxic fermentation are all that we can clinically be sure of. The signs are those of irritant poison. It may last from two hours to five or six days or longer, and it is possible a child might die from collapse.^a The prognosis is usually very favourable.

Treatment.—The sooner the offending material is removed the better. The poison must be got rid of. An emetic should be given at once—a teaspoonful of ipecacuanha wine repeated till vomiting empties the stomach; washing out the stomach in bad cases. A purgative of calomel is then indicated, as—

R. Calomel	-	gr. i.	
Sod. bicarb.	-	gr. iiij.	Every 3 hours.

Or—

R. Hyd. c. cret.	-	gr. iiij.
Sod. bicarb.	-	gr. iv.
Pulv. rhei	-	gr. iv.

3i. of castor oil or of elixir of senna is also very suitable.

Stop all food for 24 hours; then begin with milk and Vichy, cold Bovril, ice, whey, or light jellies.

During recovery, follow with effervescing alkaline medicines, occasional use of fluid magnesia, or a bitter alkaline tonic for older children.

VIII. DYSPEPTIC CONDITIONS.

“Possetting”—Vomiting—Flatulent colic.

Functional disturbances of the digestive organs in infancy are invariably due to some error of diet. These are “diet disorders.” They are, therefore, mostly due to hand-feeding. Many works in treating of these affections use the word “catarrh,” and thereby produce endless confusion in the student’s mind. In cordial agreement with Dr. Donkin and Professor Henoch, I believe the less we use the word “catarrh” and the more we think of digestion and absorption the better, and prefer no diagnosis to the theory of gastric catarrh arising idiopathically or by a conveniently hypothetical chill. We have here to do, not with a primary disease of the mucous membrane, but with secondary affec-

^a Professor Henoch has observed a respiratory complication which he terms “asthma dyspepticum.”

tions which must be regarded as arising from a chemical process in the alimentary canal. We know little of catarrh as a demonstrable condition.

"*Possetting*" is regurgitation into the mouth of surplus milk. Many infants "posset" regularly for the first few months of life, and it is harmless—nay, at times salutary. It is a physiological safety-valve action on the part of the stomach.

At present we do not know the exact capacity of a child's stomach. It is estimated by Dr. Rotch, from experiments on 341 infants, that—

At birth it contains 0·98 ounces.			
1 month	„	2·35	„
2 months	„	3·22	„
3	„	3·96	„
4	„	4·57	„
5	„	5·28	„
6	„	5·71	„
7	„	6·18	„
8	„	6·95	„
9	„	7·54	„
10	„	7·89	„
11	„	8·07	„

Hence it is exceedingly easy to overfeed a young child.

The stomach of a new-born infant cannot hold more than a wineglassful without over-distension. Too quick or too large feeding will produce this possetting, which is entirely due to overloading. The stomach empties itself without any effort, or even consciousness, of the child; its vertical position, deficient development of cardiac sphincter, the small fundus, and the small amount of great curvature and its cylindrical form, favour this safety-valve action. If over-distended, its muscles contract and spasmodically pump up its contents. The small size of the organ is completely forgotten. For the first three months of life it is very little bigger than a Higginson's syringe, and not unlike it in shape.

This regurgitation immediately follows greedy suckling. The stomach possesses a kind of automatic regulating function, and as soon as the pressure reaches a certain point it

contracts, and the contents are suddenly shot up the œsophagus. It is a rebellion of Nature against overfeeding; were it not so violent dyspepsia would undoubtedly ensue. There is no retching, no effort, no paleness, languor, or faintness to indicate nausea.

It is, then, absolutely harmless. It requires no treatment other than a warning as to improper, excessive, and too frequent feeding. Mothers' milk requires two hours for its digestion and cows' milk certainly longer; therefore lessen the food at once. Never resort to patent foods until you are absolutely convinced milk or cream mixtures properly and skilfully diluted undoubtedly disagree. There is no question but that cows' milk scientifically mixed is the best substitute for the breast.

Vomiting and Gastric Dyspepsia.—All vomiting must be watched. Among 100 consecutive cases of dyspepsia in infants under twelve months at the Evelina Hospital Dr. Soltau Fenwick reports that 9 were breast-fed entirely, 91 artificially fed. Of these latter 51 received sweet condensed milk, 25 some form of farinaceous food, and 15 pure cows' milk.

Among the 9 breast-fed babies 3 showed diarrhœa, tonsillitis, and influenza in the *mother*, directly co-existent with the dyspepsia of the child. Maternal emotion can undoubtedly affect the infant at the breast. Condensed milks disagree from reckless feeding, and an excess of sugar producing fermentation. Farinaceous foods cannot be digested in early infancy through inefficient saliva and pancreatic juice, and hence they ferment in the stomach and bowel. Cows' milk disagrees from its excess of proteids and the insoluble character of its curd. It is not mixed scientifically, but at haphazard by ignorant nurses and mothers.

Any undigested food in the stomach may produce vomiting. Reflex vomiting occurs in cerebral cases, the onset of eruptive fevers, pneumonia and whooping-cough, scarlet fever, tonsillitis, enteric fever, or intussusception. The vomiting of indigestion has *regular pulse*, full abdomen, and diarrhœa, while that of brain disease has *irregular pulse*, retracted or scooped-out abdomen, and constipation.

If the contents of the stomach are analysed in these cases

of dyspepsia free hydrochloric acid is generally absent, whereas lactic and organic acids are usually present from fermentation, and the food will be found to lie unduly long in the stomach.

These dyspeptic derangements are chemical processes arising from organic and bacterial decomposition of food, and *not* organic structural disease of the tissue of the body. They are fermentative and septic processes arising in the contents of the digestive tube, and are not gross lesions of the tube itself. Of course in time they will induce changes in the mucous membrane, but these are secondary and not primary. If confined to the stomach vomiting and gastric symptoms predominate, but if passing further down the tube the intestinal manifestations are somewhat different, and pain, flatulence, colic, or diarrhœa results. Expulsion of the contents of the stomach effects a natural cure, and the trouble may cease in three or four days.

The dangers are of the vomiting becoming chronic. Little by little the child may become "a juiceless, withered, and wasted thing," with dry, scurfy skin, depressed fontanelle, and a pinched and "peg-top" face—this progressive wasting ending fatally by collapse, and with hydrocephaloid symptoms. The mucous membrane may become disorganised and atrophied (from what is termed chronic gastro-intestinal catarrh), and the case develop into one of infantile atrophy familiarly known as marasmus, where the alimentary canal may be so deprived of its digestive and assimilative structure and functions as to resemble a simple India-rubber tube.

These cases to the naked eye show little or no disease, but microscopic examination may reveal atrophy of the beautiful glandular structure of the mucous membrane of the tube.

Pain, Flatulence, and Colic.—These are the manifestations of the dyspeptic fermentative conditions we have spoken of arising in the intestine, isolated, perhaps, in some central coil, and many feet distant from either orifice, expulsion through which alone constitutes the immediate cure. There may be neither vomiting nor diarrhœa, the other aperture, the pent-up gases and fermenting materials being confined in the bowel. There is in these infants, then, fretfulness and irritability, pain causing the child to writhe in agony,

with violent fits of screaming, twitching of the face frowning, turning up, rotating, or fixing the eyes, muscular contortions of the body, with the knees drawn up, soles inverted, and fingers clenched on the thumbs, a pale, agonised, sweat-bedewed face, or sudden and alarming convulsive trembling of the arms and legs, termed by Professor Henech "lightning contractions," which abruptly cease on the discharge of flatus or other matter from the bowels. These tonic muscular spasms coincident with the pain are well known and not inaptly termed by nurses "inward convulsions"

If inquiry is made, the cause will be found in errors of diet. A baby of six or eight weeks will be found to be getting perhaps cows' milk unskilfully mixed, it may indeed be pure, or, worse still, some patent starchy food instead of its mother's milk, or a properly-proportioned cream mixture, or other scientific substitute, for the first nine months of its life.

The *Treatment* of these dyspeptic conditions is mainly dietetic. First empty the alimentary canal by an *emetic*—3i of ipecacuanha wine, or grs. 5 of powdered ipecacuanha repeated frequently will give relief. Follow this by castor-oil as a purge, or calomel gr. $\frac{1}{8}$ every hour or two. When the bowels have been emptied a castor-oil mixture in severe cases is useful in 5 minim doses, with mucilage and peppermint-water. Bismuth is also taken well.

The standard of human milk is an average deduced from the analyses of Luff (for Cheadle), Meigs, Leeds, and König. The cows' milk is Dr. Cautley's average of London milk as it reaches the consumer.

The "cream milk" made by the Aylesbury Dairy Co. specially for infants is manufactured as follows:—Equal quantities of mixed cows' milk and of a nine per cent. solution of milk sugar are passed through a separator so arranged that the outgoing streams are equal. The "cream milk" is very like human milk in composition, and has been used at the Belgrave Hospital for Children. It is rendered faintly alkaline, Pasteurised, and sold in vacuum-stoppered bottles.

Guard against overfeeding; lessen the amount of food. If possible confine the child to the breast; if not, correct the wrong feeding at once. Give very dilute milk, scientifically resembling human milk. A reference to the following tables will guide us in the correct strength of the substitute:—

—	Human Milk	Cows' Milk	Infants' "Cream Milk," made by Aylesbury Dairy Co.	Rotch's Artificial Mixture. F.
Water - -	87.46	87	—	—
Solids - -	12.54	13	—	—
Proteids -	1.93	4.06	1.82	1.50
Fat - -	3.62	3.70	3.7	3.50
Lactose -	6.75	4.48	6.88	6.50
Salts - -	0.24	0.76	0.39	—
Reaction - -	Amphoterous	Acid	—	—

Rotch's F. mixture is one of 13 such devised by him for different states and ages. This one most closely resembles human milk, and is artificially made as follows:—

Cream - -	-	-	7 ounces.
Milk - -	-	-	1 „
Lime-water -	-	-	1 „
Water - -	-	-	11 „
Milk sugar -	-	-	500 grains.

Dr. Cautley recommends^a:—

Milk - -	-	-	3 ounces.
Water - -	-	-	3 „
Cream - -	-	-	1 „
Lime-water -	-	-	1 „
Milk sugar -	-	-	3 drachms.

This might be conveniently recollected as—a wineglassful each of milk and water, a tablespoonful each of cream and lime-water, and one lump of sugar.

Painful Colic may be relieved by hot stupes, a light mustard

^a Feeding of Infants. Pp. 144 and 152.

poultice, warm bath and hot blanket, gentle friction over abdomen, and a teaspoonful either of peppermint-water, dill-water, or half a drachm of chloroform water. Sal volatile, brandy, and syrup of ginger suggest themselves pending the operation of the purgative. Washing out the stomach if necessary.

Convulsions may, in addition, demand a mustard bath, and a chloral and bromide enema.

LIQUID AIR

Is quite harmless, and can be sprayed from an ordinary vaporiser or filtered through paper as easily as water. The diminution of temperature caused by it, however, causes all chemical action to cease—galvanic batteries refuse to work, phosphorus will not combine with oxygen, and only by first starting ignition can fragments of diamond be persuaded to burn in liquid air. The carbon dioxide then produced immediately solidifies and floats about in the liquid. The air of the lecture theatre was, at a demonstration, liquefied in the open whilst the spectators watched the operation, and the opacity of the resulting liquid clearly pointed to the presence of much carbon dioxide in the environment. Finally, salts, feathers, ivory, and silk were dipped in liquid air, and their luminosity found to be so stimulated by the low temperature that they phosphoresced brightly. And so this most attractive performance was brought to a close.

CRAIG COLONY FOR EPILEPTICS.

WE learn from the *Journal of the American Medical Association* that this experiment, conducted in the State of New York, by Dr. Frederic Peterson, has been most successful. "In the last report on the effect of colony life on the patients at Craig Colony it is stated that nearly every individual of the 145 patients admitted since the informal opening, Feb. 1, 1896, has been markedly improved physically and has gained weight. Their epileptic seizures have diminished in frequency to a noteworthy degree, and in a few instances there has been a complete cessation of attacks for months at a time. From an economic standpoint the Craig Colony promises to be a success unparalleled among similar charitable organisations. Eliminated from political jurisdiction it bids fair to become self-sustaining. From the date of the opening, Feb. 1, 1896, to Oct. 1, 1896, the colony produced about 50 per cent. of the cost of maintenance."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science by Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. Volume IX.: Diseases of the Digestive Organs. London: Sampson Low, Marston & Company, Limited. 1897. 8vo. Pp. 820.

THE ninth volume of this huge work deals with local diseases of the mouth, diseases of the intestines, hernia, and diseases of the spleen, liver and gall-bladder. At the end of the volume there is an admirable article on Movable Kidney from the pen of a well-known Dublin surgeon, whose lot is now cast at Johannesburg, South African Republic. Needless to say, we refer to Dr. Kendal Franks, recently Senior Surgeon to the Adelaide Hospital, Dublin, and Vice-President of the Royal College of Surgeons in Ireland. How this article got into a volume devoted to diseases of the digestive organs is for the versatile but self-effacing editor to explain. Perhaps the solving of the riddle may be found in Professor Keen's opinion quoted by Dr. Franks, that "the discomforts" (of movable kidney) "are very great, and the pain may be so excessively severe and prolonged as to interfere with all occupation, and practically to make life almost unendurable. The disorder may pass beyond the realm of bearable evils into serious and actual danger to life itself, so that in considering the slight mortality from nephrorrhaphy, we must also bear in mind that there is a mortality attending the expectant treatment as well."

Geheim-Medicinalrath Johann Mikulicz, Professor of Surgery in the University of Breslau, and Dr. Werner Kümmel, Privatdocent at the same University, have spent much ingenuity in multiplying local diseases of the mouth. The first portion of their very elaborate and able article

appeared in the eighth volume, and has been already noticed in these pages. It dealt with the buccal manifestations of the systemic diseases. In the present section of their monograph they give a faithful study of the diseases which are confined to the tongue, dividing them into affections of the surface of that organ only and these which involve the entire organ. Diseases of the floor of the mouth, of the gums, and of the lips and cheeks are described, so that the article is comprehensive.

Professor Carl Anton Ewald, of the University of Berlin, is the author of the section on Diseases of the Intestines, from which are specially excluded infectious diseases, parasites and hernia—all which subjects are treated elsewhere in the encyclopedia. Dr. Ewald gives some excellent advice on the subject of general therapy. At page 101 there is a scathing yet good-humoured denunciation of ready-prepared diet-cards, which are compared to “the homœopathic booklet, where one need only to search for the catch-word, cough, dropsy, painful limbs, or something similar, and at once find named the proper tincture or pellet.” He shows how the “personal equation” of the patient may render useless the best diet-card, and he wisely remarks that “the physician should rather obtain a minute knowledge of the composition of food-stuffs, their preparation, and their physiological action, so that he may be able at any moment to turn it to account.”

We like Professor Ewald's style, and wonder who is his anonymous translator, who is generally so very happy in his rendering of the author's German into English. We cannot forbear to quote a couple of sentences from the account of the symptoms of habitual constipation, or “atony of the bowel,” which is given at page 195—“There is no other diseased condition which has become to such an extent the playground of the layman's imagination, and of the arts of the natural healer and the quack than habitual constipation. The ‘Proktophantast’ of Goethe, who is only happy when leeches suck delight from out his buttocks; the ‘Staats-hæmorrhoidarius’ of the funny papers (*i.e.*, the German official who is suffering from constipation and piles), and Molière's ‘malade imaginaire’ are well-known types of this kind.”

It is to be regretted that Dr. C. B. Ball's name is not included in the list of bibliographical references at the end of Professor Ewald's monograph.

Dr. Virgil P. Gibney, Surgeon-in-chief to the Hospital for the Ruptured and Crippled, New York, and Dr. John B. Walker, Assistant-Surgeon to the same Institution, contribute a joint article on Hernia, which runs to great length and cannot fail to prove of interest to all surgeons.

Diseases of the Spleen have been entrusted to Dr. Alfred Stengel, of Philadelphia. We do not go all the way with the author in some of his statements—for example, that “it is impossible to draw a sharp line between acute congestion of the spleen and acute inflammation,” or that the frequency of enlargement of the spleen in “typhus fever is scarcely less than that in typhoid.”

The description of parasitic affections of the spleen occupies less than three pages, and is not satisfactory. The important topic of hydatid disease is disposed of in a few paragraphs, which—if read by themselves—would convey but a poor idea of the wonders of the echinococcus disease. Fortunately, there is a much fuller description in the monograph on Diseases of the Liver in a subsequent portion of the volume, but even there Semmola and Gioffredi fail to convey at all as clear an account of the *Tænia Echinococcus* and of hydatid disease as that which is contained in Murchison's masterly treatise on Diseases of the Liver.

This subject is dealt with at great length by Dr. Mariano Semmola, Professor of Clinical Therapeutics in the University of Naples, assisted by Carlo Gioffredi, Lecturer on Therapeutics in the same University, and Physician to the Hospital for Incurables, Naples. An amusing, but obvious, mistake at the beginning of this, the longest and most important monograph in the volume, represents the liver as “lying in the *left* hypochondrium” (page 392).

Not fewer than 327 pages are given up to Messrs. Semmola's and Gioffredi's treatise on Liver Diseases. Its opening sections are devoted to the anatomy and minute anatomy of the liver, its physiology and general pathology, general symptomatology and general therapy. There are some verbal errors in these sections, such as “hilus” for

“hilum” on page 393, and “vena porta” for “vena portæ” on pages 399 and 412; but these do not detract from the value of this portion of the work, which is enriched by the results of the original researches of both the authors. They point out, at page 409, that, from the review they give of the physiology of the hepatic cell, it may be seen that all the various functions, to the performance of which the liver is adapted, may be grouped together under two principal heads—(1) the prevention of waste, and (2) depuration. If we compare life to a steam-engine, the liver would represent the tender always filled with materials for combustion—glycogen and fat, which it has obtained from intestinal absorption. On the other hand, the formation of urea, the protection against poisons, and the destruction of the old red blood corpuscles constitute an emunctory function very similar to that of the kidney. The bile represents the product of this complex chemical laboratory in the hepatic cell, the purpose of which is to assist in the digestion of food.

In the section on “General Therapy of Hepatic Diseases,” the (to us) novel and barbarous expression “altered chemism” more than once occurs. The authors repeatedly insist on the necessity for a *milk diet* in hepatic disorders, in which point they are at variance with some leading British authorities. Here is what they say of milk—“The best intestinal antiseptic, because it improves the digestion, benefits the catarrhal condition of the intestines, creates conditions unfavourable to the development of the microbes, and limits abnormal fermentations, is a milk diet” (page 520). Again—“In acute diseases of the liver, the process being an inflammatory one, a milk diet and absolute rest in bed form a method of treatment which is usually carried out without objection on the part of the patient. The greatest difficulty experienced is in chronic diseases (parenchymatous or interstitial hepatitis, &c.), and yet the *sine quâ non* of success is an absolute milk diet, above all of ass’s milk, which is the one poorest in fats. This diet, which is the basis of all treatment of liver disease, was recognised and appreciated by the ancients, but its very great value has been insisted upon especially among modern writers by one of us (Semmola)” (page 509).

The classification of liver diseases, adopted by the authors,

is not as clear or as schematic as Murchison's; but the subject-matter of their descriptions of the various maladies is excellent. In a word, this brilliant monograph by the Italian physicians is one of the finest contributions to "Twentieth Century Practice" which has yet appeared. It is, however, entirely unillustrated.

Very appropriately, an article on Diseases of the Gall-bladder follows Diseases of the Liver. It is written by an able surgeon, Dr. John B. Murphy, Professor of Surgery in the College of Physicians and Surgeons and Post-Graduate School and Hospital, Chicago. In the preparation of this article the author has adhered closely to the classification of Courvoisier, as it is based upon the pathological conditions. Naunyn's excellent classification of gall-stones has been followed. There are several useful explanatory illustrations.

Volume IX. is, in our judgment, one of the best which has, up to the present, issued from the press.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. BATTY TUKE, M.D., and D. NOËL PATON, M.D. Vol. VI. Edinburgh: William F. Clay. 1897. Pp. 303.

THE papers in this volume of these valuable reports complete the record of the work which has been done in the old laboratory, founded in 1888. It is a record of which the Edinburgh College may well feel proud. One hundred and fourteen papers have been published, which may be thus roughly classified:—

Anatomical	-	-	23
Physiological	-	-	27
Pathological	-	-	47
Pharmacological	-	-	15
Other subjects	-	-	2

But this list of published works gives a very inadequate idea of the work of the laboratory. Reports on morbid specimens sent by practitioners have been freely made, and have risen from 50 in 1890 to 456 in 1896. Photography has been very extensively employed for scientific purposes, the number of photographs taken exceeding 1,000 per

annum. The preparation of diphtheria antitoxin has been commenced; and the good influence exerted on the numerous young physicians who availed themselves of the laboratory, and the stimulus given to a more scientific practice of medicine are simply incalculable.

The success attending its earlier attempts has led the College now to fit out and equip a larger and more efficient laboratory, a description of which is given in the present volume of the reports. Judging from this description, and from the plans and drawings, the new laboratory leaves little to desire, and we would most cordially congratulate the College and wish all success to their enterprise. The objects of the laboratory are thus stated—"The new laboratory, like the old, is open to those who desire to undertake original investigations in the medical sciences on their giving evidence of their being able to carry on such work with a good prospect of success. Applications are considered by the Committee, who recommend to the Council, and this body grants a place in the laboratory. Apparatus, chemicals, &c., are supplied by the College free of charge, while assistance is given by the superintendent and a staff of laboratory servants. The examination of and reporting on morbid specimens is carried out as in the old laboratory."

The papers in the present volume are 36 in number; of six of these the titles only are given. Many of the others have been published *in extenso* elsewhere, and are given here only in abstract, while some have not been before published. Seven papers deal with anatomical subjects. A very elaborate paper, the abstract of which occupies 30 pages—on the Changes in the Mucosa of the Corpus Uteri and in the attached Fœtal Membrane during Pregnancy, by Dr. J. C. Webster—heads the list, and is followed by a valuable memoir by Dr. Berry Hart on the Development of the Clitoris, Vagina, and Hymen, illustrated by six beautiful plates. Abstracts of two papers by Dr. Gulland, both published in the *Journal of Physiology*, follow. In the first, on the granular leucocytes, he draws the important practical conclusion, that "in diseased conditions it is probably impossible to say what organ is affected from the kind of leucocyte present in excess in the blood." In the

second he gives the result of an anatomical investigation on the vaso-motor nerves of the intra-cranial blood vessels, the result of which supports the physiological work on the same subject—namely, that there are no such nerves.

Three papers, by Dr. R. J. A. Berry, on the Cæcum and Vermiform Appendix contain much matter, not only of purely anatomical interest, but of the greatest practical importance to the surgeon. It was found “that the appendix springs from the true apex of the cæcum on the postero-internal aspect of the gut, and in close proximity to the ileo-cæcal junction. This relation of appendix to cæcum is an almost constant one, and it may, therefore, be said that in over 90 per cent. of cases the appendix will be found arising from the postero-internal aspect of the cæcum at a point 1.7 cm. below the lower border of the ileum, just where that viscus enters the large gut. This fact is of immense value to the surgeon.”

There are eleven physiological papers. The superintendent, Dr. Noël Paton, gives a long abstract of his valuable paper on the relationship of the liver to fats, which was published in the *Journal of Physiology* last year. Among many most interesting facts made out, it is shown “that some of the fatty acids in the liver are linked with phosphorus and cholin to form lecithin, and this lecithin is a forerunner of the nucleo-compounds of the body. The liver thus seems to have the function of utilising and economising the phosphorus of the body by combining it with fatty acids as a stage in its reconversion to nuclein compounds.” There is some evidence pointing to the production of fatty acids from glycogen. But in another paper Dr. Paton finds no confirmation of Pavy’s statement, that the epithelium of the intestines can convert carbohydrates to fats, but the fat found in the epithelium during the digestion of grain is derived entirely from the fat of the latter.

Dr. Dunlop, in a laborious and valuable paper on the excretion of oxalic acid by the urine, finds that oxalic acid is not produced in the metabolism of the body—that it is absorbed from the alimentary canal, and does not undergo oxidation in the body, but is excreted unchanged. That the amount absorbed depends on the amount in the food, and

largely on the amount of acid in the stomach. "That oxaluria is no special pathological condition, but is essentially a hyperacid dyspepsia, and that all its symptoms can be referred to the existence of acid dyspepsia."

Of the other physiological papers we can afford only to notice Mr. Trotter's confirmation of Nebel's statement, that while in ordinary butcher's meat glycogen undergoes such rapid change after death as to be found only in traces or not at all, in horse-flesh a considerable quantity of glycogen can be found by Külz's method, even so late as ten days after death. This fact can, therefore, be employed to detect horse-flesh when an attempt is made to sell it as meat of another kind.

Of the twelve pathological papers the first six are by Dr. Stockman, on subjects connected with anæmia; of three of them the titles only are given. Of the other papers in this group we would notice that of Dr. Boyd, on apparent reduplication of the second sound in mitral stenosis. It is urged "that where a reduplication is heard at the apex and not at the base it is an apparent, not an actual, reduplication of the second sound, and that the second element is produced at the mitral orifice, and may be actually a diastolic murmur."

Five pharmacological papers, all of considerable interest and importance, conclude the volume, which it will be seen well supports the position of the earlier numbers, and will still further enhance the high reputation of the noble institute of which they are the organ.

A Manual of Anatomy. By IRVING S. HAYNES, Ph.B., M.D.; Adjunct Professor and Demonstrator of Anatomy in the Medical Department of the New York University; Visiting Surgeon to the Harlem Hospital, &c. London: Henry Kimpton. 1896. Pp. 680. [Printed in America].

THIS must not be taken to be a regular systematic anatomy, as its title would lead one to expect; nor, indeed, can it be classed as a regular practical anatomy, for its practical instructions are too brief to be of any great use. It probably will be most correct to describe it as a practical anatomy note-book. This, although it has run into 680

pages, including an index of 30 pages—of which, by the way, the author seems to be very proud. However, as the type is large, and the matter is given in the form of short and well-separated paragraphs, the pages might be reduced by one-third or one-half. The book, which purports to take up the various points in the order in which they are met when dissecting, is essentially jotty, and, we must add, incomplete. When we say that the capsule of Tenon is disposed of in four lines, in which absolutely no idea of the structure is given; that as regards muscles, we find only the briefest statement of their origin, insertion, nerve-supply and action, without a word as to position or relations; that the suprarenals have a dozen lines devoted to them; that the nerves and vessels are disposed of in the same brief way—the inferior mesenteric artery, for instance, receiving for itself two lines, in which not one word is said about its position—we give an idea of the jotty nature of the book.

At the same time there are some good ideas, and some really clever things among its pages; but they are so buried amongst its less attractive parts that we cannot recommend the student or anyone else to go to the trouble of finding them out. Indeed, we know no class either of student or qualified medical men who would find the book of any use whatever. Our reasons for saying this will be seen when we give the following examples extracted at random from the text—(1), the apex of heart corresponds to the fifth intercostal space, two and a half inches from the median line; (2), the vertical measurement of the liver at its thickest part is three and a half inches; (3), when distended the long axis of the bladder is parallel with a line connecting the umbilicus and the anus; (4), the ureter is a small canal one-sixteenth of an inch in diameter; (5), the ureters open into the bladder three-quarters of an inch behind the orifice of the urethra.

The author expresses several novel views regarding the topography of the thoracic and some of the abdominal viscera, which he has arrived at by means of composite photographs. We fear that his results will not meet with general acceptance—from most of them we are compelled to dissent.

We cannot leave down the book without referring to the illustrations, the majority of which are process reproductions of photographs taken by the author, and occupying, as a rule, the greater part of a page. With the exception of a few we never saw anything so wretched as these illustrations; anything more hideous and more useless than some of them—for instance, Figs. 3, 84, 86, 96—we cannot well imagine.

Human Anatomy, General and Descriptive, for the use of Students. By JOHN CLELAND, M.D., LL.D., D.Sc., F.R.S.; Professor of Anatomy in the University of Glasgow; and JOHN YULE MACKAY, M.D., C.M.; Professor of Anatomy in University College, Dundee. Glasgow: James Maclehose & Sons. 1896. Pp. 833.

ANY book from the pen of such a well-known and so distinguished an anatomist as Professor Cleland must command our attention. For many years he has been one of the leading scientists of these countries, one who has worked and thought for himself, and one, we might add, who holds very special views on many subjects.

When such a veteran in the science has associated with him so energetic a worker as Professor Yule Mackay, it is but natural to expect, as a result of the combination, a brilliant book, imbued with the experience of the one and the energy of the other. Such a book we expected, but for some unaccountable reason our expectations have not been quite fulfilled. It is true that the book is in many respects original, and in many ways it has our warmest approval, but in several other regards we cannot consider that it has come up to the standard of our modern text-books. Its greatest fault lies in the fact that it is too old-fashioned, too conservative. Conservatism—judicious conservatism—is, to a certain extent, in these days of too hasty change, rather a merit than a fault; but when it determines to exclude what is new, even though it be undoubtedly true, then it surely goes too far. The conservatism with which we find fault is that which in this book excludes all, or most of, the excellent work that has been done in recent

years on topographical anatomy—that branch of the subject which is, after all, of greatest interest to the practitioner. In proof of what we say, we would refer the reader to the accounts of any of the important viscera—for instance, the liver or the uterus (about the position and relations of the latter of which there is, by the way, scarcely a single word). It is really trying to read the accounts of these organs in view of the results of His, Cunningham, and others who have devoted considerable attention to topographical anatomy, and given such excellent accounts of the position and relations of the viscera. In fact, the important branch of applied anatomy has been almost entirely neglected.

On the other hand, we think very highly of certain parts of the book—namely, of the histology, with which the book opens; of the references to comparative anatomy, which are always judicious and apposite; and of the many interesting notes throughout the book which Professor Cleland gives of his own experience and observations on special points. With the book as a whole we are not satisfied, and we must say that in our opinion it can never be a useful and convincing student's text-book.

The arrangement is that usually followed in English text-books. The first 80 pages are devoted to general histology—a part of the book which is very well done. This is followed by 20 pages on general embryology, which is also careful and satisfactory work. Osteology comes next, and associated with it we find the anatomy of the joints. The bones are described very well, but we think the descriptions lack that conciseness which students find so useful. At the end of this section there is an interesting account of the shape and varieties, and of the development, of the skull.

The bones are succeeded by the muscles, the descriptions of which seem somehow to lack crispness and interest. The vascular system, which comes next, is better. We remark, in passing, that the old and objectionable expression transverse portion of the arch of aorta is still retained.

Then follow in order the nervous system, the organs of sense, the viscera, respiratory, urinary, and reproductive organs, with an appendix on the utilisation of Röntgen rays.

Sectional anatomy, as a means of illustrating topography, has been entirely eschewed.

Of the illustrations—with the exception of those taken from Testut, which are very numerous, of some illustrating microscopic anatomy, and a few others—we would rather not speak.

The book is well printed and well turned out, but the contents certainly want recasting and retouching if the work is ever to fill the position to which it aspires—a Text-book “for the use of Students.”

Report on Leprosy in New South Wales for the Year 1895.

Presented to the Legislative Assembly.

THIS valuable document consists of a short report giving the number of patients under detention as lepers in the lazaret, the number of deaths, new admissions, discharges, and expense of maintenance. We notice that the average annual expense per patient was £72 0s. 11d., and that while the modest sum of £2 7s. 9d. was expended on books, papers, &c., the cost of the wine, beer, and spirits amounted to £100 19s. 10d. Following the report proper are three appendices; the first gives the number of persons found to be suffering from leprosy and removed to Little Bay; also deaths and discharges for each year since 1883. The greatest number of new admissions was in 1892, when 12 fresh cases were received—most years the number did not exceed 2 to 4. The total number admitted since 1883 is 58, of which 19 have died, 2 have been discharged cured, and 37 remained on Jan. 1st, 1896.

The second appendix gives the particulars of lepers detained at Little Bay since 1883; their sex, nationality, occupation, and age at, and date of admission.

The third appendix is of great scientific importance. It gives clinical and ætiological notes on the cases of patients admitted or deceased during the year 1895 by Dr. J. Ashburton Thompson, and notes on the histopathology of the tissues of patients deceased during 1895 by Frank Tidswell, M.B.

These admirable records contain much that will be found

of the highest interest by every student of leprosy. The reports on morbid histology are illustrated by twelve very successful micro-photographs. Among the interesting points made out are—(1), the establishment of the presence of bacilli in the erythematous maculæ of anæsthetic leprosy; (2), varieties in the form of the bacilli as found in serum preparations, many of which are possibly involution forms; (3), exact measurements of the length of the leprosy bacillus, which shows it to be shorter than stated by many writers; (4), the rarity of multinucleated cells in leprosy growths; and (5), the non-occurrence of amyloid degeneration in any of the cases. This form of degeneration, so common in Europe, appears to be rarely observed in Australia, even in cases of syphilis and phthisis.

Lectures on the Action of Medicines, being the Course of Lectures on Pharmacology and Therapeutics delivered at St. Bartholomew's Hospital during the Summer Session of 1896. By T. LAUDER BRUNTON, M.D., F.R.S. London and New York: Macmillan & Co. 1897. 8vo. Pp. 673.

THIS volume consists of two parts. In the first thirty lectures the different organs and functions of the body are considered one by one, and the way in which they can be influenced by different drugs is explained. In the last five lectures the drugs are considered individually, and it is shown that in most cases the action of a particular substance is not confined to one organ, but is exerted upon many.

Like everything which Dr. Brunton writes, the book is eminently readable. The style is clear and animated, the matter enlivened by anecdotes, personal and other, and full of the happiest illustrations. At the same time in its perusal we could not help feeling occasionally that the author sometimes falls somewhat below the level of his subject, and assumes rather the character of the popular lecturer than that of the scientific teacher. There are many statements throughout the work which are, to say the least, of doubtful accuracy, and the impression left on the reader is that our knowledge of the action of drugs is very much more precise and definite than it really is. In making these remarks we

are far from under-rating the very great value of these lectures, and we feel sure that there is no one who reads them who will fail to gain much pleasure and instruction from their perusal.

It is interesting to notice Dr. Brunton's preference for chloroform rather than ether as an anæsthetic. He stoutly maintains the position of the Hyderabad Commission, that death by chloroform is due to stoppage of respiration, the deaths from stoppage of the heart being due not to the anæsthetic but to shock.

Aphasia and the Cerebral Speech Mechanism. By WILLIAM ELDER, M.D. London: H. K. Lewis. 1897. Demy 8vo. Pp. 259.

AFTER a short historical introduction the author studies the mechanism of speech, and in doing this he follows the processes which take place while the child is acquiring the faculty of expressing himself, rather than those which are manifested in the adult who has fully mastered spoken and written language. He, therefore, studies—firstly, the receptive mechanism by the two routes of the ear and eye, and secondly, the mechanism by which the impressions thus received are stored up in the memory, and can be recalled at need; and finally, the productive mechanism by the two routes of speaking and writing. From a long and interesting study of the receptive and productive routes, the following conclusions are drawn as to the localisation of their termination and origin in the cerebral cortex. “That the hearing centres are in both hemispheres in the posterior half of the first and second temporal convolutions, and that the visual centres are in both hemispheres in the occipital lobes in the neighbourhood of the calcarine fissure; that analogous to these primary receptive centres—or that part of the cortex where the incoming nerve fibres reach the nerve cells first—we have on the motor side two areas where the nerve fibres leave the nerve cells in the cortex—viz., the lower part of the ascending frontal and ascending parietal convolutions in both hemispheres, the beginning of the spoken speech tract, and the middle of the ascending frontal and ascending parietal

convolutions in the left hemisphere (owing to the right hand only being usually used for writing), the beginning of the writing speech tract. We have seen also that on the production side there is a higher or specialised centre, the psycho-motor speech centre, situated in the left hemisphere only, in the foot of the third frontal, and that there also probably is a higher or specialised psycho-motor writing centre in the posterior part of the second frontal. Analogous to these, many cases have proved that on the receptive side there are two higher or specialised centres: one, the word-hearing centre, situated in the same region as, but more limited in area than, the hearing centre, and on one (the left) side only; and the other, the word-seeing centre, situated in the angular gyrus and posterior part of the supra-marginal convolution on one (the left) side only." These statements are illustrated by an exceedingly graphic coloured diagram.

Having completed the study of the speech mechanism from the anatomical and physiological points of view, the author proceeds to study it by its disorganisation, as shown in the different varieties of aphasia. Like all writers on this subject, Dr. Elder gives a diagram which is intended to illustrate schematically the relations and connections of the different receptive and productive centres with one another, and with the higher intellectual centres. Such diagrams are in the highest degree useful, but it is not very easy to keep clearly before one's mind that they are but diagrams, and that the whole arrangement in the brain is of a very different and of a much more complicated nature than it would appear from the study of the scheme on paper. However, Dr. Elder's diagram is eminently clear and intelligible, and illustrates admirably his views.

Lichtheim has shown by a somewhat similar scheme that there are, putting aside the visual and graphic centres, seven possible varieties of auditory and speech aphasia, according to the point at which the chain of centres and their connections are broken in the brain, and that these seven varieties actually do occur. Dr. Elder, treating written speech in the same way, shows that, putting aside spoken speech, it is possible to theoretically produce seven forms of lesion here also, and seven theoretically different varieties of graphic aphasia.

While three of these varieties have been shown to occur, the others have been considered doubtful. The author, however, adduces examples of two others. There are thus fourteen varieties of aphasia and agraphia possible, and of these, twelve have been actually observed.

The determination of the different varieties can be made by a systematic examination of the patient, and this examination involves asking and receiving answers to twelve questions. The fourteen varieties of aphasia are then taken, and the answers to the twelve questions are given in each case.

Clinically, however, the cases are somewhat more complicated, as the lesions are generally such as to involve more than one centre or set of fibres, so that in each case we have symptoms of more than one of the simple varieties. It is possible to divide aphasic cases into five different types, namely—(1) auditory, (2) motor, (3) visual, (4) graphic, and (5) conductive aphasia, the last variety produced by lesion of the fibres connecting the sensory to the motor side.

Each of these types is then studied in detail, and many interesting original cases are recorded. Among the many valuable and suggestive subjects dealt with we would notice the account the author gives of his researches on mirror-writing, from which he concludes that mirror-writing with the left hand is not originated in the right side of the brain as occurs where a patient, paralysed in the right side, learns to write in the ordinary way with his left hand, but is guided from the same centre as ordinary writing with the right hand—that is, from the graphic centre in the left brain through commissural fibres.

In a short chapter on amusia, or disturbance of the music faculty, an interesting summary of the extensive researches of Edgren on this subject will be found.

The last chapter, on aphasia from a surgical point of view, is valuable, as showing how, from a careful study of disturbances of the speech faculty, an accurate localisation of a brain lesion may be made, and how it may be shown whether this lesion is superficial or deep—in other words, removable or not.

The entire work is strikingly clear and practical, and is a

valuable contribution to the literature of a most interesting subject, which, as the author says, if thoroughly understood "would give us the key to a knowledge of a great part of the mechanism of cerebral functions."

Physiology. Student's Note-book (for the Laboratory). Part I. Physiological Chemistry. By ARTHUR J. HALL, M.B. London: Baillière, Tindall & Cox. 1897.

THE author desires that this little work shall fulfil three purposes—"1. To tell the student, in as few words as possible, what he is to do whilst in the laboratory. 2. To encourage him to make notes as to the results he obtains at the time he obtains them, and thus serve as a *laboratory note-book*. 3. By means of the marginal notes in small type to briefly remind him of the meaning, character, &c., of the tests he is doing."

The book seems well calculated to serve these purposes, being interleaved, and clearly arranged. It does not appear to us, however, to be much different from the very numerous other books of its kind now before the public, and like them we think it would be better if it gave fewer tests and more explanation.

Sur certaines Réactions Chromatiques du Sang dans le Diabète sucré. Application thérapeutique. Par le DOCTEUR JEAN LE GOFF. Paris: 1897. Pp. 118.

THE author of this interesting little work has discovered that when blood is fixed on a cover glass, according to the usually employed method, and stained, the affinities of the red corpuscles for dyes is different in the case of normal blood and in that of diabetics. In the former case the corpuscles stain with the so-called acid dyes—the most familiar example of which is eosin—while when the blood is taken from a diabetic the corpuscles are found to colour with basic dyes. Minute details of the proceedings by which the blood is prepared and stained are given in Chapter II.

The staining properties of the plasma, also, are altered in diabetes, for while in the case of normal blood the colour of

a hot alkaline solution of methylene blue is not affected by addition of a certain bulk of plasma, the addition of diabetic plasma in the same proportion destroys the colour. On this decolorising property the author founds a method for the quantitative estimation of glucose in diabetic urine, which, however, does not appear to us to equal either in accuracy or in facility the methods which we already possess.

Going further, Dr. le Goff has tried if methylene blue given internally exerted any effect on the condition of diabetic patients. Three cases are recorded, in two of which an improvement in the condition, and a diminution in the sugar in the urine were noticed.

Exercises in Practical Physiology. By AUGUSTUS D. WALLER, M.D., F.R.S. Part III. Physiology of the Nervous System; Electro-Physiology.

THIS extremely useful work differs from most of the books on practical physiology which have been published, in being written for advanced students who have already expended one year in the study of physiology. Further, it is not intended that even such students should undertake themselves the performance of all the exercises, for in some cases "the student will require much assistance from a skilled demonstrator; in others he will at most take some part in a carefully-prepared demonstration."

The exercises—68 in number—are, as we might expect from Dr. Waller, all interesting, and many of them full of ingenuity and suggestiveness. The earlier ones deal with general electrical laws and methods for their demonstration, while, subsequently, more properly physiological experiments are described. Among some of the exercises we may notice the graduation of an induction coil in units of strength of current for different distances of coils; measurement of resistance by Wheatstone's bridge; measurement of potential by compensation; mapping out of equipotential lines in a dish of zinc sulphate, through which a current is passed by zinc electrodes; determination by the charge or discharge of a condenser of the minimum energy of stimulation necessary to excite a nerve; photographic records of the deflection of a

galvanometer, and of the excursions of a capillary electrometer, laws of contraction, and variations of electrotonic excitability, not only in nerve-muscle preparations, but in man—a subject on which Dr. Waller has made most valuable researches; Gotch's interesting experiments on the effects of temperature on the excitability of nerves; demonstration of Dr. Waller's recent work on the action of anæsthetics upon isolated nerves: the electrical variations of the heart in uninjured mammalia, including man; the demonstration and photographic record of the retinal currents; demonstration of the heat produced by contraction of muscle in man, and many others of no less interest. To everyone engaged in either teaching or studying the higher branches of physiology this work will prove invaluable, and to all such we cannot recommend it too warmly.

The Disorders of Digestion in Infancy and Childhood. By
W. SOLTAU FENWICK, M.D. London: H. K. Lewis.
1897.

THIS volume has been compiled from Dr. Fenwick's notes of 5,000 cases of disordered digestion. It is a series of essays on these puzzling ailments. There are twelve chapters, of which the most important treat of "Dyspeptic Conditions" (vomiting, colic, constipation), "Summer" or "Infective Diarrhoea," "Marasmus" or "Infantile Atrophy," and "Toxic Gastritis" or "Gastric Attacks," with others on more complicated conditions.

The nomenclature of these ailments is not as here described, but the expression "catarrh" is invariably made use of. We think this renders the disease obscure to the reader, though we appreciate Dr. Fenwick's effort to stamp the mischief with an anatomical name. This is, however, sometimes impossible. After most carefully reading over these essays we think Dr. Fenwick has been working at this subject for many years, that he has accumulated a great amount of experience with the object of publishing it, but that the book has been hurriedly put together. After all the time spent in the acquisition of this knowledge more care might have been bestowed on its compilation. Most valuable

material, the outcome of very hard work and patient industry, had been suddenly rushed into print with scarcely that amount of care and caution which might have earned for this volume the title of a "classic."

Any physician who sees much of children should read the four chapters above alluded to, as they are the pick of the volume. The print is very large and clear, the paper good, and the binding excellent.

Notwithstanding this apparent hurry to get his material into print, no one can speak with more authority on this subject than Dr. Soltau Fenwick, and, therefore, his work is of the highest value and should command universal respect.

Transactions of the Ulster Medical Society and of the North of Ireland Branch of the British Medical Association.
Session 1895-96. Belfast. 1896. Pp. 141.

THE Ulster Medical Society is the product of the amalgamation, in 1862, of the Belfast Medical Society with the Clinico-Pathological Society. We learn from the Report for 1895-96 that it met ten times that year, with an average attendance of 34.6. There were 130 members, of whom 22 were new accessions. The Transactions include the President's Address, and fourteen papers—some mere reports of cases. Dr. Killen's glance at the vivisection controversy is gruesome reading; but he holds the balance evenly between the combatants. About one-third of the volume is occupied by the Proceedings of the North of Ireland Branch of the British Medical Association, which flourishes in that climate—including 108 Belfast, and 152 country members; its numbers increased by 13 during the year. The Branch met five times—once in connection with Dr. Cuming's candidature for the General Medical Council. The President, Dr. Dempsey, delivered an address, and nineteen other communications were made. One of these is an interesting paper, by Dr. Lindsay, on the Indications for sending Consumptive Patients to Davos Platz. The paper is founded partly on personal experience, partly on the history of four cases sent to Davos last winter. We subjoin Dr. Lindsay's description of the climate:—

“The climate is thus one of great extremes, but the dryness and stillness of the air prevent these extremes from having the injurious effect that might have been anticipated. It is one of the curious anomalies of the Davos climate that on one side of the house exposed to the sun the tar will be melting, while at the same moment on the other side in the shade huge icicles will be seen hanging. The other important points are the dryness of the air, the freedom from fog, mist, and dust, the comparative absence of bacteria, the stillness of the atmosphere, the large amount of ozone, and the high average of bright sunny days. To give a few brief particulars on this last point, so important for consumptive invalids, let me select two years, the winter of 1879-80 and the winter of 1880-81—the former an unusually good year, the latter about an average. In the former year October had 22 fine and almost cloudless days, while on the remaining 9 days some rain or snow fell. November had 9 good days to 21 middling or bad; December 20 good days, January 22, February 15, March 21. In the succeeding year, October had 8 fine days, November 16, December 15, January 19, February 14, March 13.

“It will be seen from these figures how much Davos excels the home average as regards fine weather and sunshine, and that it equals some of the most noted Southern resorts, such as the Riviera and Algiers. To sum up, the advantageous features of the Davos climate are the rarefaction of the air which promotes pulmonary activity, the tonic properties of the combined cold, dryness, and sunshine, the atmospheric calm which prevents the cold being unpleasantly felt, and the comparative latency of all forms of bacteriological activity.”

The Pocket Therapist. By THOS. STRITCH DOWSE.
London: Simpkin, Marshall & Co. 1897.

IN a book of 192 pages, that can without inconvenience be carried in the pocket, the author offers to students of medicine and junior practitioners a compendium of the modern treatment of disease, which has mainly in his own experience proved to be useful, and in turning over and reading the pages of the book he appears to justify his promise. For instance, “‘*Plague Bubonic*,’ Yersin has been treating this fearful disease, &c. Of 26 cases in which M. Yersin injected serum 24 recovered (*B. M. J.*, Feb. 6, 1897).”

“*Diphtheria*: the growing opinion is against too active local treatment, it is in favour of the administration of antitoxin at the earliest possible moment in full dose,” &c.

“*Neurasthenia* is a term applied to any and every form of functional or dynamic incapacity on the part of the grey matter of the brain, or spinal cord, or ganglia, or of the conducting material, &c. *Neurasthenia* is now the accepted term for functional debility, weakness, and exhaustion,” &c.

The little volume is useful, practical, and scientific, and suggests the idea of a larger work which would tabulate in chronological order the treatment of the various diseases, with the names of the physicians and surgeons who first proposed and practised them.

A Clinical, Pathological, and Experimental Study of Fracture of the Lower End of the Radius with Displacement of the Carpal Fragment towards the Flexor or Anterior Surface of the Wrist. By JOHN B. ROBERTS, A.M., M.D.; Professor of Anatomy and Surgery in the Philadelphia Polyclinic, &c. Philadelphia: P. Blakiston, Son & Co. 1897. Pp. 76.

THE only preface to this interesting and exhaustive monograph is that it is “a contribution from the Surgical Laboratory of the Philadelphia Polyclinic and College for Graduates in Medicine.” The reading of it and the study of its details make one hope that the work of the surgical laboratory may be extended to many more of the rarer surgical lesions of the skeleton, and even though each one may, like this, cover seventy-six pages the graduates in medicine will not tire in their study.

The first of the three divisions of our author’s study—the clinical—is of great interest, for it establishes very clearly that fracture of the lower end of the radius, caused by fall on the back of the hand or by muscular action, with displacement of the lower fragment forwards, reversed Colles’ fracture, is not so rare an injury as it is represented to be in our ordinary surgical text-books. Dr. Roberts puts this matter before us in the following words:—“When I began this study I believed that the injury under consideration

was rare, and it was my intention to make a rather exhaustive search in the various medical museums for specimens. I have been deterred from this step, however, to a considerable extent, because I soon found that clinical cases and museum specimens illustrating the lesion were not so exceedingly uncommon as I had supposed."

In all he records the details of three and twenty cases observed in the living, and of one of these he gives us as good as a *post-mortem* examination to confirm his diagnosis—the skiagraph of the fracture united with permanent displacement.

Of specimens preserved in various museums he quotes thirty-one examples, of which Dublin has furnished him no less than eight of the series, seven from the museum of the School of Physic, Trinity College, and one from the Royal College of Surgeons; these museums also furnish three casts of the limbs affected with the lesion, the original Smith cast of an old united fracture being one of them. The series of experiments which Dr. Roberts records shows that it is possible to produce this fracture by over flexion of the wrist in the dead body, but that it is much more difficult to do so than it is to produce a Colles' fracture under the same condition. We learn too from these experiments that forced flexion of the wrist can produce fracture of the carpal bones, chiefly the os magnum and unciform bones.

In the discussion of the cause and mechanism of the injury Dr. Roberts reviews the many and various opinions held by writers, from the time of Rhea Barton (1840) to the present, and in guarded language expresses his own opinion thus:—"I believe that one cause at least of this fracture with forward displacement is extreme flexion of the radio-carpal joint, by which a portion of the base of the radius is torn off by a sort of cross-breaking strain, due to the fact that the dorsal ligaments retain their integrity."

As to treatment our author is very clear and simple. "The treatment consists in immediate and complete reduction of the fracture, followed by a retentive dressing, which will not interfere with the free use of the fingers."

One feels a relief in finding that no special and infallible splint is added to the many published examples. We cannot

close this short notice of Dr. Roberts' monograph without expressing our commendation of each and every section of it.

Bubonic Plague in Bombay. A Paper read by DR. ACCACIO G. VIEGAS at the Meeting of the Grant College Medical Society, 24th November, 1896. Pp. 67.

THE author of this paper appears to have been the first to recognise the outbreak of plague in Bombay, and to have striven, long unsuccessfully, to awaken the municipal and other authorities to a sense of the appalling danger which overhung the city. The first case was recognised in September, 1896. The epidemic still exists in Bombay (though, for obvious reasons, with abated virulence), and was rapidly communicated to Karáchi, Poonah, and other towns; and at some periods of its course exhibited a mortality of 99 per cent. In these countries, in these days, we have no reason to fear an outbreak of "Black Death;" but the historical interest of the Bombay and the previous Hong-Kong epidemics of bubonic plague is very great—and Dr. Viegas' paper is a valuable summary of his own experience of the disease. In discussing the ætiology of the outbreak he examines and dismisses the theories of its causation which have been put forward. It did not, he decides, come from Hong-Kong—it was not imported with sugar and dates, nor with infected clothing, nor with plague-sick rats, nor with dead rats; nor was it due to damaged grain or ill-kept granaries. For the arguments against these hypotheses we must refer to the paper itself, which is, on other grounds as well, worthy of perusal. In the author's opinion "the disease is due to the accumulated filth in the sewers of the Port Trust Estate—accumulation of putrefying matters in these drains . . . which contained dirt, especially organic dirt such as fæcal matter, decomposing urine, &c., in large quantities—the untouched accumulations of nearly a quarter of a century." The drains in this section of the city were built in 1871, and had never been cleaned since. They soon became blocked, partly from the simple practice of the scavengers who were wont to empty night-soil baskets into the gullies. The

other city drains could be, and were, periodically cleansed. When at last these Port Trust drains were cleaned, it is true that none of the labourers caught plague; but, says Dr. Viegas, they were picked men, and disinfectants were liberally used. "I think that the plague-bacillus, whether imported or existing in Bombay, would not have flourished and attained the necessary virulence to attack man and lower animals, were it not for the filthy condition of the drains of the Port Trust Estate."

Dr. Viegas compares the Bombay disease with the 14th century plague in Europe, and concludes that the inferior virulence of the former is due to the spread of civilisation and sanitation. "The more insanitary the place is, the greater the havoc the disease creates." One sign of greater mildness is worth mentioning. The eruption of petechiæ, which in the older disease was so copious as to justify the popular name of "black death," was in the present epidemic insignificant. In mortality there is little appearance of greater mildness. "During the first four weeks of the outbreak mortality ranged between 95 and 99 per cent., and latterly it has been between 85 and 90 per cent." London in 1665 could scarcely have beaten that record.

Treatment?—"We must confess that there is no line of treatment which can be called specific."

CENTRES OF MEDICAL EDUCATION, U.S.

THE *Journal American Medical Association* calls attention to the gradual change in the centre of medical education that is taking place. Comparing the statistics of 1888-89 with those of 1894-95, we find that the Chicago medical institutions have increased in attendance from 1,338 to 2,294, while the New York medical colleges show a decrease in the attendance, which has fallen from 2,081 to 1,893. Baltimore has almost doubled its attendance and now has 1,293 students. St. Louis now takes fourth place, having passed Baltimore, Cincinnati and Louisville; and it now stands fourth with an attendance of 1,399, while Louisville is sixth with 947 students, a decrease of 43. Philadelphia, which was over 500 behind New York in the first period, is now over 300 ahead with an attendance of 2,201, a gain of 686 over the figures of 1888-89.

PART III.

SPECIAL REPORTS.

REPORT ON PRACTICE OF MEDICINE.

By HENRY T. BEWLEY, M.D. Univ. Dubl.; F.R.C.P.I.;
Physician to the Adelaide Hospital; and Lecturer on
Medical Jurisprudence in Trinity College, Dublin.

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- II. THE TREATMENT OF GRAVES'S DISEASE.
- III. ON WIDAL'S TEST FOR TYPHOID FEVER.
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MUCOUS MEMBRANE.
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- VI. CARDIO-PULMONARY MURMURS.
- VII. HYDRASTIS CANADENSIS IN BRONCHIAL CATARRH.
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DISEASES.
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TION.
- XVII. BLACK TONGUE.

I. THE DUCTLESS GLANDS.

Dr. H. C. Wood (Philadelphia) remarks that *thyroid gland* is useful in other morbid conditions besides myxœdema. It is often of great service in those forms of obesity in which there is a tendency to general softness and flabbiness of tissue—in other words, in the so-called “fat anæmias” of some writers.

In insanity the records are, on the whole, records of failure rather than of success, although in cases of melancholia, and some other chronic insanities, some good is said to have been effected. In skin diseases good results have sometimes been achieved, especially in cases where there is a large development of tissue of a low type, as keloid, hypertrophied cicatrix, and sometimes in chronic eczema with great thickening of tissue. It usually aggravates the symptoms of exophthalmic goître.

As to the mode in which it lessens the weight of patients taking it, he holds that it does so—in part by causing destruction of the nitrogenous tissues, but still more largely by wasting the carbohydrates of the body.

Thymus Gland.—Concerning the medical value of this gland we have little or no knowledge, except that the first statements as to its value in exophthalmic goître have not been borne out by more recent clinical studies.

Pituitary Body.—The fact that the pituitary body is often diseased in cases of acromegaly has led to the supposition that it has widespread relations to the general nutrition. So many cases of acromegaly without disease of the pituitary body, and so many cases of disease of the pituitary gland without acromegaly, have been reported that it is very doubtful if the connection between this body and acromegaly is ever more than accidental. There is at present no evidence that it has any therapeutic value.

Suprarenal Capsules.—Although the physiology of these glands is far from settled, it appears from the experiments of Schäfer and Oliver that the intravenous injection of minute doses of suprarenal capsule is followed by a great rise in arterial pressure, this rise being due to contraction of the small arteries; in fact, they consider it the most powerful known stimulant of the muscle-wall of the arteries. Oliver suggests that it will be of use in cases of asthenia and anæmia in which there is a great loss of general vaso-motor tone. Wood gives no opinion on the suprarenal treatment of Addison's disease.

Spleen.—The enlargement of the spleen, which occurs in myxœdema, cretinism, and after excision of the thyroid body, naturally suggests that there is a relationship between the

two organs. The discovery of Oliver and Schäfer that the intravenous injection of splenic extract into a dog causes an immediate fall of arterial pressure, followed by a pronounced and continuing rise, shows that the extract is not an inert body. In a case of severe chronic exophthalmic goître under Wood's care some years ago acute splenitis developed in an inexplicable manner. An abscess formed deep in the organ, whose opening was followed, after many months of severe sepsis and desperate illness, by return to health. In the second or third week of the splenitis the enlarged thyroid began to diminish, and in a short time regained the normal size. The result was a permanent cure of the exophthalmic goître.

This case led him to try splenic extract in various cases of this disease. Two difficulties attend its administration. If given by the mouth in sufficiently large doses it is very apt to cause pain, nausea, and vomiting. If used hypodermically it often causes great local irritation and even abscesses. In two cases in which the treatment was carefully tried there was much improvement. In one case—that of a lady in whom the disease had lasted for six years—the treatment was, with some intermissions, kept up for six months. At the beginning her pulse was about 180, and irregular; exophthalmos was very marked; and the thyroid was greatly enlarged. At the end of the treatment the thyroid enlargement had disappeared, and the general condition had immensely improved. The exophthalmos was less, and the cardiac action greatly reduced. Other modes of treatment had previously proved useless.

Dr. Wood remarks that although in thirty-five years' practice he had seen many cases of exophthalmic goître in which great improvement occurred, he had never before seen such a diminution in the size of the thyroid.—*Amer. Jour. Med. Sci.*, May, 1897.

II. TREATMENT OF GRAVES'S DISEASE.

Hector Mackenzie reports 20 cases of Graves's disease treated by himself with thymus gland, and contrasts them with a similar number treated by other methods. *Pulse rate*.—In 12 no alteration was observed, in 2 it increased slightly, in 5 it diminished slightly, and in 1, in which the

slowing was considerable, the rate subsequently increased again whilst the remedy was still being continued in large doses. Of the 20 comparison cases there was no alteration in 11, in 2 it increased slightly, in 4 there was marked diminution, and in 3 slight lessening of the frequency.

Thyroid gland.—There was material diminution in size in 3 cases, increase in 2, in 1 increase after initial diminution. Of the contrast cases, the goître diminished in 4, disappeared in 1, increased in 1. In 13 no change was observed.

Exophthalmos.—Decidedly diminished in 1 case, and in that it had commenced to lessen before thymus treatment was commenced. In the contrast series 3 lost their exophthalmos.

As regards the general bodily condition, the change in weight was somewhat in favour of treatment without thymus. The dose varied from several ounces to 10 or 15 grs. a day. The author arrives at the conclusion that the thymus gland possesses no specific action in Graves's disease; in most cases it has no effect either on the heart, on the goître, or on the exophthalmos; at the same time it appears to improve the general condition, and may be placed in the same class of remedies as cod-liver oil. The dose, to be of any use, should be at least one or two drachms a day, of the fresh gland or its equivalent in the form of extract or powder.—*Amer. Jour. of Med. Sci.*, and *Quarterly Med. Jour.*, Ap., 1897, p. 280.

III. ON THE DIAGNOSIS OF TYPHOID FEVER.

Widal's clinical diagnostic method, which was based on the work of Pfeiffer, seems to Dr. Haedke, of the Stettin Hospital, to be trustworthy and practical. In every case in which an autopsy or the course of the disease proved it to be typhoid, a positive reaction was obtained, and in every other disease tested the result was negative. The number of typhoid cases examined was 22, and of other diseases the number was 20. About 5 cm. of blood was drawn from the finger, and the serum was separated by the centrifuge. Haedke considers the "bouillon" test to be the most reliable. Serum in the proportion of 1 to 10 was added to an uniformly turbid typhoid bouillon culture of at least twelve hours' growth. The tubes were examined after two, eight, twelve, and twenty-four hours. After a certain time a granular

dissemination took the place of the uniformly turbid appearance. When the reaction was completed the agglutinated masses sank to the bottom. The rate at which the reaction took place varied. In one the broth became quite clear in an hour, and in three others after the tubes were placed for about three hours in the incubator. In no instance did the fluid become turbid after it once became clear. The precipitate on the sides and bottom of the tube is flocculent. In one case which was certainly not typhoid an appearance as if fine sand were suspended in the fluid was produced. This pseudo-reaction was obtained by Breuer in five out of twenty-seven cases of other diseases investigated by him. Widal laid special stress on the microscopical agglutination observed in hanging drops. Haedke inoculated the serum drop with lively bacilli from the border of an eighteen hours' growth on agar. He found that in the short time required to get the preparation ready and in focus there was often a marked effect. Instead of the free and lively movements seen in inoculations of ordinary serum there was stillness in all parts of the preparation. In some cases the clumping was as marked as in the microscopic clusters in broth. In other cases the reaction was not pronounced for a quarter of an hour, whilst in a third series of cases, which were by no means exceptional, the movements were not quite lost, and agglutination never became marked. Again, in other diseases there were some cases in which after an hour impaired movement and a tendency to heaping was evident. The conclusion as regards the microscopical method of diagnosis appears to be that when the reaction is rapid and pronounced the disease is probably typhoid. When there is no change in the form or movements of the bacilli after half an hour the disease is probably not typhoid. Haedke's cases were in the first, second, third, fourth, fifth and sixth weeks, and one was a case of relapse. The serum of a colleague who had typhoid eleven years ago gave no reaction.

Prof. Fraenkel (*Deutsche med. Wochenschrift*, January 14, 1897) cites Breuer's results as fully bearing out Widal's statements. In 47 cases of typhoid the reaction was definite and certain. In one case it was at first uncertain, but later it was found very distinctly. The stages of the fever in the

patients examined varied from the sixth day to the sixth week. The blood of nine convalescents was also tested. In two of these, whose temperature had been normal for seventeen days and three and a half weeks respectively, the reaction was negative. In the remaining seven convalescents for periods varying from five days to three months a positive reaction was obtained. Fraenkel considers the microscopic phenomena seen in hanging drops to constitute the finest and sharpest test. He examined the blood of twenty-eight patients, and in every case the reaction was undoubted. Of a special interest was the fact that a marked positive reaction was obtained in the blood of a young man who had complained of severe headache, and had a high temperature for only two days. The other patients were between the fourteenth day and the sixth week of the fever. Of eighteen convalescents with normal temperatures for from four days to seven weeks, in sixteen there was a positive reaction. In two convalescents in the third and fifth weeks of convalescence the result was negative.—*Quarterly Med. Jour.*, Ap., 1897, p. 270.

IV. A CHARACTERISTIC SIGN OF MEASLES OCCURRING ON THE BUCCAL MUCOUS MEMBRANE.

H. Koplik (New York) describes an appearance, generally overlooked, which he considers of great value in forming a diagnosis of measles. If we look in the mouth, he says, during the first twenty-four or forty-eight hours of the invasion of measles—*i.e.*, at a time when the cutaneous rash has not yet appeared, when there is coryza and conjunctivitis—we see a redness of the fauces; perhaps, not in all cases, a few spots on the soft palate. On the buccal mucous membrane and the inside of the lips we invariably see a distinct eruption. It consists of small, irregular spots, of a bright red colour. In the centre of each spot there is noted, in strong daylight, a minute bluish white speck. These red spots, with accompanying specks of a bluish white colour, are absolutely pathognomonic of beginning measles, and when seen can be relied upon as the forerunner of the skin eruption. These specks of bluish white, surrounded by a red area, are seen on the buccal mucous membrane and on the

inside of the lips, not on the soft or hard palate. Sometimes only a few red spots, with the central bluish point, may exist, six or more, and in marked cases they may cover the whole inside of the buccal mucous membrane.

As the skin eruption begins to appear and spreads the eruption on the mucous membrane becomes diffuse, and the characters of a discrete eruption disappear and lose themselves in an intense general redness. In some cases of beginning measles the spots on the buccal mucous membrane are so few as to escape notice if not carefully looked for. It is, therefore, advisable in all cases to place the patient opposite a strong light from a window, and, in opening the mouth, to evert as it were the buccal mucous membrane with a spatula or with the thumb and index finger, pressing the while on the outside of the cheeks.

There is nothing characteristic about the appearances on the hard and soft palate.—*Archives of Pediatrics*, Dec., 1896.

V. A NEW SYMPTOM OF STENOSIS OF THE TRACHEA.

The symptoms of tracheal stenosis are few and not always certain. A new one recently described by Aufrecht will therefore be looked for with interest. If the patient is examined with the stethoscope over the trachea, just above the sternum, the normal loud bronchial breathing usually heard in both phases of respiration is either replaced by a short, soft breath-sound or else is quite inaudible. This has been found by Aufrecht three times—twice in cases of mediastinal cancer growing into the trachea and once in a case of gumma compressing the trachea. The explanation of the phenomenon is as follows:—In the normal condition the air passing from the narrow glottis into the wide trachea causes bronchial breathing on account of the formation of eddies. For this a certain rapidity of the air-current is necessary, and this is furnished under ordinary conditions by the even calibre of the trachea. If the latter is narrow, so that the lumen approaches that of the glottis, the eddies coming out of the glottis must become weaker and so produce the modification described.—*Centbl. f. inn. Med. and Am. Jour. Med. Sci.*, April, 1897.

VI. CARDIO-PULMONARY MURMURS.

In a paper in the *Edinburgh Medical Journal* (May, 1897) Dr. G. Sanders states Potain's views as to the causation of so-called functional murmurs, and gives his reasons for dissenting therefrom. Potain's theory, which is very widely held in France, is that these murmurs are for the most part extra-cardiac, or cardio-pulmonary in origin. He believes they are produced in the lung surrounding the heart by the expansion of the lung suddenly filling the space left vacant by the movements of the heart. The murmurs, he says, are heard only over that part of the præcordia where there is a layer of lung interposed between the heart and the chest wall. At times this may be strikingly confirmed, as when the area of a murmur is found to follow exactly the outline of the border of the lung. Again, observations on animals show such murmurs to be frequent without any organic disease of the heart. And actual observation may demonstrate it: Potain observed a systolic murmur in a horse in the exact spot where after death a tongue of lung was found to exist. Again in an experiment on a dog, in which such a murmur had been discovered, by opening the pleura a hook was introduced, by means of which the lung was retracted, with the result that the murmur disappeared; when the lung resumed its former position the murmur reappeared.

Sanders, criticising these views, remarks that it is incorrect to say that these murmurs are heard only over subjacent lung; they are often heard in situations under which *post mortem* no lung is found to exist. The lungs too are variable in size and position, and it is difficult to explain through their agency a murmur so constant and definite in position and nature as the pulmonary murmur of chlorosis.—*Ed. Med. Jour.*, May, 1897.

VII. HYDRASTIS CANADENSIS IN THE TREATMENT OF BRONCHIAL CATARRH.

In the *Centralblatt für innere Medicin* for May 1st Dr. M. Saenger, of Magdeburg, gives his impressions of hydrastis as a remedy for bronchial catarrh. It seems that some six years ago he prescribed it for a patient whom he was treating for a tuberculous affection of the larynx and apex catarrh,

the immediate occasion of its employment being a trifling hæmoptysis caused by the patient's lifting a heavy weight. Four days later Dr. Saenger saw the patient again, and learned from him that for three days there had been no blood in the expectoration, and, furthermore, that a tormenting cough with which he had suffered had completely disappeared, the expectoration had become decidedly less, and the character of the sputa had changed in that they were far less frequently greenish and tenacious than before. The patient, a man of intelligence, imputed all his improvement to the use of the medicine that had been ordered for him.

Although Dr. Saenger himself was properly sceptical as to this point he tried hydrastis on another phthisical patient, not for the purpose of checking hæmoptysis, but to mitigate a troublesome cough with great difficulty of expectoration. In this case, too, there was great improvement. For the most part the sputa lost their purulent admixture and became thinner. The patient declared that the medicine had given him more relief than he had obtained from the morphin, codein, Dover's powder, apomorphin, and other like drugs that had previously been ordered for his cough. His night's rest was no longer disturbed by coughing, he could breathe easier and deeper, he felt stronger, and he was better able to attend to his business. As in the first case mentioned, physical examination of the thorax showed a notable diminution of the bronchial catarrh.

Subsequently Dr. Saenger used hydrastis in a great number of cases of bronchitis, including those not dependent on tuberculous trouble. He found that in the initial stage of acute bronchial catarrh it was quite ineffectual, but that in the subsequent course of the disease it was beneficial, especially if the course was protracted and the sputa had lost their purely mucous character and assumed a muco-purulent aspect. He found the remedy particularly efficacious in chronic bronchitis, for it mitigated the cough strikingly, facilitated expectoration, changed the muco-purulent character of the sputa to a more mucous one, and decidedly diminished the physical signs.

As compared with opium and its derivatives, says Dr. Saenger, if hydrastis is not quite so prompt in its action in

checking the cough it is more enduring and its final effect is greater, for it acts upon the cause of the cough, producing a more or less complete disappearance of the catarrh. As an expectorant it is at least equal to the other expectorants and solvents that are in use. So far as can be judged from physical exploration of the chest and from examination of the sputa it far excels the other anti-catarrhal drugs in use. He states that he could not do without hydrastis now in the treatment of bronchial catarrh, acute as well as chronic, for it enables him to dispense with the use of opium and its derivatives almost entirely in the treatment of tuberculous subjects.

He has employed it in the form of the fluid extract almost exclusively. To adults he gives twenty, twenty-five, or thirty drops four times a day in a little sweetened water. In case it does not produce the expected effects larger doses may be used. He has not found hydrastinin so trustworthy as the fluid extract. He has never observed dangerous or unpleasant effects from the doses of the fluid extract mentioned, but he remarks that very large doses may give rise to angina pectoris in the subjects of heart disease and in very debilitated persons.—*N. Y. Med. Jour.*, May 15, 1897.

VIII. THE DOSAGE OF NITRO-GLYCERINE.

W. L. Armstrong (*Med. News*, October 31, 1896) believes that a contracted state of the arteries produces a condition which tolerates larger doses of nitro-glycerine than when the arterial walls are in their normal state. In six patients with normal hearts and arteries to whom $\frac{1}{100}$ gr. was administered every hour headache was produced before the expiration of twenty-four hours. Another patient with well marked atheromatous arteries but no tension was given by mistake at a single dose $2\frac{1}{2}$ grains of the drug. No discomfort whatsoever followed. In a case of asthma and albuminuria with marked arterial tension without atheroma the remedy was gradually increased for twenty-five days until 76 grains were taken in the twenty-four hours with marked benefit; at no time did he suffer from headache or any symptom that could be attributed to the action of the drug. In a second case (nephritis with

high arterial tension but no atheroma) 125 grains were given in the twenty-four hours without unpleasant symptoms. The author concludes that (1) the drug is only likely to produce disagreeable effects in cases in which arterial tension is not raised; (2) when arterial tension is increased the dose should be proportioned to the degree of tension; (3) in these cases tolerance is rapidly acquired, and by a slight daily increase very large doses can soon be taken with safety, the constant guide being the degree of tension in the arterial wall.

Angel Money (*Lancet*, November 23, 1896) states that nitro-glycerine appears to have no toxic effects in infants and small children even in very large doses. He constantly prescribes 1 minim of a 1 per cent. solution to infants under the age of two years every two or three hours in place of sweet spirits of nitre. Dr. D. Stewart (*Medical News*, November 14, 1896) calls attention to the fact that nitro-glycerine, in common with the nitrites in full doses, partially or completely arrests the oxygen-carrying power of the red corpuscles, producing a condition of methæmoglobin—a condition which cannot but be injurious, and one to the ill effects of which tolerance cannot be acquired. In a case of his own (*Ther. Gaz.*, September, 1893) in which 20 grains were taken daily, a decided dusky hue was produced by much smaller doses. The drug cannot be given immoderately even though it does not unduly flush the face and cause headache.—*Quarterly Med. Jour.*, Jan., 1897.

IX. THE USE OF CERTAIN ANTISEPTICS IN DIARRHŒA.

Dr. M. H. Fussell (*Ther. Gaz.*, August 22, 1896) has a high opinion of salol. He arrives at the following conclusions:—Diarrhœa, due to dietetic errors, and that which is common in adults and infants in summer, is well controlled by the administration of salol, bismuth and chalk. Salol controls abdominal pain equally as well as opium; it is perfectly safe, having no bad after effects; it is especially useful in the treatment of the diarrhœa of children; it constantly corrects the foetor of the stools. The cause of diarrhœa should if possible be removed,

numerous cases will always remain in which drug treatment must be continued, and it is in these cases that salol and bismuth should be employed in preference to opium, reserving the latter for more severe cases in which constant movements of the bowels and distressing pain continue in spite of rational treatment.

Dr. S. Solis-Cohen (*Med. News*, Aug. 22, 1896) holds that in summer diarrhoea in children the alimentary canal should at once be cleansed of irritating and toxic matters; for this purpose calomel in small doses, or calomel and aromatic syrup of rhubarb, should be given, and repeated once or twice if necessary. If vomiting is marked and medication ineffective the stomach may be washed out with warm water and sodium borate or bicarbonate one drachm to the pint. To cleanse the bowel a high enema of warm normal salt solution may be required. After the bowel and, if need be, the stomach have been cleansed, nothing soothes and disinfects the alimentary canal so satisfactorily as a powder consisting of benzo-naphthol and bismuth salicylate in equal parts with or without Dover's powder. The dose is regulated rather by the quantity which the child can swallow than by the amount of active drug, except as regards opium. A child of six months can usually swallow three grains of the powder, say one and a half grains each of benzo-naphthol and bismuth salicylate. The intervals between the doses vary from two to four hours at first, and are prolonged in accordance with the improvement in symptoms. The dose for an adult is about five grs. each of bismuth salicylate, benzo-naphthol and Dover's powder. It is the combination, not any one constituent, that is effective. Milk feeding should be stopped during active treatment and barley water substituted. After two or three days freshly prepared meat juice, Pasteurised milk, or even boiled milk may be used. In cases of severity, approaching collapse, hot bathing, external application of heat, and strychnin may be necessary.—*Quarterly Med. Jour.*, Oct., 1896.

X. THE ABSORPTION OF DRUGS BY THE HEALTHY SKIN.

Drs. G. Linossier and M. Lannois conclude that volatile bodies, notably those which, in spite of a high boiling-point,

possess a certain vapour-tension at ordinary temperature, can be absorbed by the healthy skin in amounts well beyond the usual therapeutic doses. This absorption is regular, subject to invariable laws; for the two drugs studied—guaiacol and methyl salicylate—the dose can be made according to the therapeutic indication as well as if they were to be absorbed by the intestinal tract. Some remedies can thus be employed in massive doses without risking any disturbance of the digestive functions which might follow their administration by the mouth. Apparently methyl salicylate can be administered by the skin as an advantageous substitute for the use of sodium salicylate given by way of the mouth.—*Bulletin Général de Thérapeutique*, 1896, 8e liv., and *Amer. Jour. Med. Sci.*, Oct., 1896.

XI. CREASOTE IN THE TREATMENT OF CHILDREN'S DISEASES.

Hock has had brilliant results from the use of creasote in treatment of children, not only in phthisis but in the sequelæ of whooping cough and the catarrh which so often follows measles. These two conditions, as is well known, furnish a favourable opportunity for tuberculous infection. The usual treatment with expectorants is too often without result. Most diseases of childhood are accompanied by disturbances of digestion, and these are the symptoms which are first relieved by the use of creasote. The appetite improves, the abdominal pain disappears, and weight increases. Later the pulmonary condition improves. It goes without saying that the creasote must be given in such a manner as not to upset the stomach, and large doses in a concentrated form are therefore to be avoided, the drug being given in small doses with meals. Pills, though cheap, are objectionable, especially for very young children. Hock tried in a number of instances to administer fluid creasote with tincture of gentian, but in almost every case the stomach refused the medicine after a few days. He was most successful with a one to two per cent. solution of creasote in cod-liver oil. The dose of this mixture is from one-half a drachm to one-half an ounce three times daily, according to the age of the patient.—*Wien. med. Blätter*, and *Archives of Pediatrics*, Ap., 1897, p. 315.

XII. CAMPHORIC ACID IN EXCESSIVE SWEATING.

Camphoric acid ($C_{10}H_{16}O_4$) occurs in white needle-shaped crystals. It has no smell, but a somewhat bitter taste. It is formed by oxidising common camphor with nitric acid. Its alkaline salts, such as the camphorate of soda, are readily soluble. R. Stockman has used the drug for the last four years in a large number of cases, tubercular and non-tubercular, with satisfactory results. In phthisical sweating it is as efficient as atropin, but it is, perhaps, not so powerful an anhidrotic as picrotoxin. It is useful, however, both on its own account and as a change from one or other of these. Thirty grains are given in powder, capsule or cachet at night. Owing to its insolubility it is only slowly absorbed from the intestines, and should therefore be given about two or three hours before the sweating is expected. The only unpleasant effect observed by the author has been slight irritation of the stomach. It seems to be non-poisonous, even in large doses, and in this respect has distinctly an advantage over belladonna, picrotoxin, and agaricin. Experiments on sweat secretion in cats show conclusively that camphoric acid acts as an anhidrotic by paralysing the secretory nerves of the sweat glands.—*Ed. Med. Jour.*, and *Quarterly Med. Jour.*, Ap., 1897, p. 280.

XIII. CASES OF BROMOFORM POISONING.

I. Cheyney (*Archives of Pediatrics*, Feb., 1897) administered to a child of three years, suffering from pertussis, 3 drops of bromoform in a mixture of alcohol, syrup and water, every fourth hour. The mother noticed that the last dose contained in the bottle had an oily appearance. About three hours after its administration the child suddenly complained of feeling dizzy and fell. She remained conscious for a time and acted like one intoxicated; she was jolly, laughed without cause, her head wobbled; she talked freely, although her speech was thick and unintelligible. Shortly she began to vomit and soon became unconscious. The body was limp and relaxed, the cheeks and lips had a natural rosy flush, the pupils were markedly contracted and failed to respond to light; the respirations were 20 per minute and regular; the pulse was weak, regular and 105 per minute; the breath

smelled of chloroform; the child was given an emetic and a hypodermic injection of $1\frac{1}{20}$ gr. of strychnin. Six hours after the drug was given the child had recovered completely. The bromoform had precipitated in the mixture and the greater part of it was consequently given in the last dose.

II. A child of two and a half years was accidentally poisoned by from 5 to 7 grammes of bromoform, and quickly passed into profound coma. Czygan administered hypodermic injections of ether, various forms of cutaneous excitation, and artificial respiration. This induced a marked amelioration of the pulse and respiratory symptoms, but some hours later, even though 4 grammes of ether had been injected several times, the pulse again grew feeble and the cyanosis augmented. He then injected subcutaneously $1\frac{1}{2}$ grammes of tr. of nux vomica in five doses in the space of an hour. This rapidly raised the pulse, dilated the pupils, which had continued contracted, and re-established their power to react to light and also restored the corneal reflex. At this stage the application of the faradic current caused the child to cry, open its eyes, and recognise its surroundings. The coma had endured for five hours. Recovery was complete.—*La Semaine Méd.*, Dec. 30th, 1896; *Internat. Med. Magazine*, Ap., 1897.

XIV. PAIN AND ITS THERAPEUSIS.

Dr. S. V. Clevenger, after pointing out the disadvantages of various analgesic drugs, states that lactophenin is destined to supersede largely the entire array of analgesics proper, owing to its non-toxic peculiarities and the feeling of comfort described by many physicians as following its use. It affords the best results with the least ill effects. Its range of incompatibility is less than other synthetic compounds, and it may be combined with caffein, quinine, and salicylic acid. The minimal dose of 5 to 10 grains may be increased until a daily maximum of 45 grains has been reached. It is but slightly soluble in water, although acting promptly, so that it can be given dry and be washed down with a drink of water. A dose of 15 grains usually acts as a feeble hypnotic. There are no untoward symptoms following its use, and, contrary to the experience with some synthetic drugs, the pulse becomes fuller and stronger under its use. The range of

application is extensive, and the testimony of the author is in corroboration of the findings of other physicians as to its superior analgesic effects, its safety and promptness of action.—*Journal of the American Medical Association*, 1897, No. 5, and *Amer. Jour. Med. Sci.*, May, 1897.

XV. THE TREATMENT OF INSECT BITES.

W. Ottinger (Enbrücke) calls attention to the great value of ichthyol. In the case of bites of flies, bees, wasps it quickly causes the inflammatory phenomena to abate, and in a few minutes all feeling of pain, burning, and itching ceases. It is best applied pure, a thick layer being laid on with a brush; it may also be used as an ointment with vaseline or lanoline. The most convenient mode of application is provided by the 10 per cent. ichthyol gutta-percha plaster of Beiersdorf & Co. If the inflammation, however, is extensive—*e.g.*, if the whole arm is swollen—he recommends the pure ichthyol or the ointment as more suitable than the plaster.—*Münchener med. Wochenschrift*, 1896, No. 49.

VI. THE TREATMENT OF INTUSSUSCEPTION BY IRRIGATION OF THE BOWEL.

Dr. Pynchon, of Chicago, records (*Mathew's Med. Quart.*, Louisville, January, 1897) a case of intussusception in a girl aged fourteen, which presents certain remarkable features. The condition appeared to have resulted from a diet in which cheese, crackers, chewing-gum, grapes, and oranges figured prominently. Lavage of the colon by ordinary methods failed to reduce the invagination. The patient was therefore anæsthetised, and supported in the inverted position; no tube was introduced into the colon, but a rectal tip was used, which controlled any escape of water from the rectum. It seemed a matter for regret that the room in which the procedure took place only allowed of a fall of 5 feet between the reservoir of water and the anus. The flow of water and forcible kneading of the abdomen were alternated during a period of half an hour, over 2 gallons of water being introduced into the bowel. Then, suddenly, there was a violent gushing of water from the patient's mouth, until about a gallon escaped in this way. By this time the patient had

sufficiently recovered from the anæsthetic to allow of her being placed upon the night-stool, when another gallon of water escaped from the bowel. The intussusception was found to be successfully reduced, and two days later the young lady was up and about in her usual health.—*Ed. Med. Jour.*, May, 1897.

XVII. TWO CASES OF BLACK TONGUE.

At a recent meeting of the Société anatomo-clinique de Lille, a report of which is published in the *Journal des Sciences médicales de Lille* for May 1st, M. J. Lohéac related the histories of two patients who were the subjects of this peculiar affection. Black tongue, he said, was generally presented under the form of a patch of a more or less deep black colour situated on the dorsal surface of the tongue. This patch was itself composed of villousities spreading in different directions, due to a proliferation of the epithelium which was hypertrophied lengthwise, under the influence of causes still unknown, and the epithelium at the same time became more refractive. A microscopical examination had shown the presence of various micro-organisms in the centre of these villousities, notably the leptothrix, also spores resembling those of the trichophyton, according to Magnin and Raynaud.

The ætiology of this strange disease was obscure. Authors had remarked, said M. Lohéac, and his two observations bore out the truth of this assertion, that it was developed preferably in old persons, and in those who had been weakened by disease, particularly in those who suffered with digestive troubles.

The prognosis of this affection, he said, was very favourable. It was a purely local affection, having no remote results on the general health, and did not even disturb the functions of the tongue. If the affection was left to itself, the black colour disappeared without leaving any traces after a time, by becoming progressively attenuated from the periphery toward the centre.

The treatment consisted essentially in scraping off the villousities, and generally one operation sufficed. Alkalies were indicated to combat the acidity of the mouth which was nearly always present in these cases.—*Amer. Jour. Med. Sci.*, May 22, 1897.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—JAMES LITTLE, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF MEDICINE.

President—GEORGE F. DUFFEY, M.D., President of the Royal
College of Physicians of Ireland.

Sectional Secretary—H. C. TWEEDY, M.D., F.R.C.P.I.

Friday, January 29, 1897.

The PRESIDENT, and subsequently DR. LITTLE, Pres. R.A.M.I., in
the Chair.

Morbus Pediculosus.

DR. KNOTT read a paper on *Morbus pediculosus*.

The PRESIDENT made some remarks, and Dr. Knott briefly
replied.

A Case of Diabetes Insipidus.

MR. BURGESS related a case of *Diabetes insipidus*. [It will be
found in Vol. CIII., p. 306.]

The PRESIDENT said he believed Mr. Burgess' diagnosis of the
case he had brought forward was quite correct. He (the President)
had seen only one or two cases of the disease, which seemed generally
to follow some debilitating illness. In Mr. Burgess' case he (the
President) thought that what was called gastric fever was the more
immediate antecedent of the disease. He would ask in what doses
did Mr. Burgess give the valerian? Trousseau, who introduced
the use of the drug, used to give very large doses of it—as much as
15 grains of the powdered root per day. A great number of drugs

had been recommended for this disease; and according to some authorities antipyrin had been given with good effect.

DR. JAMES LITTLE expressed a hope that Mr. Burgess would let the Academy know of the result of the case. Diabetes insipidus was such a rare disease that some people doubted its existence; but Dr. Burgess had, in the case before them, so carefully eliminated the symptoms of every other possible disease that they must accept his diagnosis as correct. As to valerian, the old-fashioned way of giving it which he (Dr. Little) used to see was to prepare a good strong infusion of it, and give the patient a claretglassful of it in the morning. He used to direct the infusion to be made by putting an ounce of the root to a pint of water. He believed the use of valerian in many nervous affections was very decided.

DR. FALKNER said he did not see why an infusion made from the concentrated liquor should not be as good as one made from the fresh root. Assuming that the efficacy of valerian in diabetes insipidus depended on the presence of valerianic acid, was it wise to use an indefinite preparation like the infusion at all? He thought the preparation to be given should be valerianate of soda, or of quinine, or of zinc. As far as he understood the pathology of this disease he thought the only rational treatment of it was that by ergot. In ordinary diabetes it was stated by Lauder Brunton that the vessels of the liver were very much enlarged, and such an enlargement might take place where an injury occurred to the head, causing reflex dilatation of the vessels. A contraction of the vessels would be caused by ergot. Another treatment was by the hydrobromate of arsenic. He was aware of a case of diabetes insipidus which had lasted for 26 years.

DR. PARSONS said he had seen only two or three cases of this disease, and none of them in Ireland. The case which impressed him most was one that he saw in Vienna. A man, aged between thirty and forty, after having drunk tolerably hard, fell down stairs and was found unconscious at the bottom of the steps. He was brought to hospital; and after he became conscious the first thing he complained of was intense thirst. Polyuria occurred shortly afterwards, and he developed all the symptoms of diabetes insipidus. That case was under the care of Professor Nothnagel. Another case which he saw in Vienna was that of a young man who, whilst in charge of a spirited horse, tripped and fell, and received a kick from the horse on the back of the head. He was brought to hospital, and the first symptom that he developed was not intense thirst but polyuria. It was pointed out by the professor that the nerve-centres which presided over the feeling of thirst, and

over the secretion of urine respectively, were probably connected together, and that in the first of those cases the shock fell with the greatest severity upon the former, and in the second upon the latter. In Mr. Burgess' case it did not seem probable that the disease dated from the child's fall on her head; it was rather connected with the obscure attack of fever. He would ask which was the first symptom in that case—the intense thirst or the polyuria? The disease in question might be very easily confounded with Bright's disease; but in the case before them the complete absence of the cardio-vascular signs, and the complete absence also of the smallest trace of albumen in the urine put out of court the possibility of the case having been one of chronic Bright's disease.

DR. DOYLE mentioned a case of a gentleman, thirty years of age, who had been in the habit of taking large quantities of drink of all kinds. He suffered from alcoholic paralysis, had hemiplegia, and developed acute mania. He passed immense quantities of urine of a very low specific gravity. He (Dr. Doyle) gave him small doses of phosphorus, with the result that he got quite well and was now in perfect health.

DR. S. M. THOMPSON mentioned a case of this disease, occurring in a young lady, which he treated with phosphorus. There had been no lesion as a cause of the occurrence of the disease.

DR. SHAW mentioned a case, which he attended, of a child, five or six years of age, who was attacked with the disease in question, the symptoms being intense thirst and excessive passing of water. This went on for two or three years. He treated the disease with opium. The patient eventually developed meningeal irritation and effusion on the brain.

DR. J. BARTON stated a case of a policeman—a man of large size—who came to him suffering from polyuria. He had been during all his previous life perfectly healthy, and had received no injury whatever; but all of a sudden he began to be very thirsty and to pass immense quantities of urine. His urine, on examination in Trinity College laboratory, was found to be perfectly free from albumen or sugar. The symptoms had been present for two or three months before he saw the man. He first gave him extract of belladonna, which did him no good. He tried a good many other things, and finally gave him pulverised opium; and after having taken it for a fortnight the patient got perfectly well, and had had no return of the disease.

DR. PEACOCKE asked had Mr. Burgess found anything to be effectual in alleviating the thirst, which was a distressing symptom in other diseases as well as the one in question. Phosphoric acid

and other things had been recommended; but his (Dr. Peacocke's) experience of them was that they were failures. Some years ago he saw a case of diabetes insipidus in the Adelaide Hospital. The patient got gradually weaker and weaker, and eventually died. On a *post-mortem* nothing abnormal was found beyond a certain hypertrophy of the bladder.

DR. JAMES LITTLE related a case which came under his notice, a great many years ago, of a clergyman who came home from Australia and suffered from excessive thirst and excessive secretion of urine. There was a record of the details of the case; but he (Dr. Little) could not at the moment recollect the quantity of urine that he used to pass. After having been many weeks under his care the patient gradually became comatose and died. The density of his urine was never more than 1003, and it was quite pale and did not contain albumen. At that time they did not estimate the amount of urea as was done now. During the patient's life he was perfectly certain that the disease was diabetes insipidus. On a *post-mortem* his bladder was found to be not much distended, but its walls were immensely thickened, and there was no sign whatever of cystitis. Apparently there had never been any inflammation of the mucous membrane of the bladder. The ureters, however, were nearly as enlarged as the small intestine of a child. He had nothing whatever like what was known as surgical kidney. There appeared to have been an obstruction to the outgo from the bladder by reason of the enlarged prostate; but from some reason he had escaped cystitis. The process developed in the course of the disease appeared to have been mechanical. Not long ago he (Dr. Little) saw what he considered to be another case of this disease; and the gentleman was still alive.

DR. LENTAIGNE remarked that in the case of the clergyman just narrated by the Chairman, if a catheter had been used perhaps the case would have terminated differently.

MR. BURGESS (in reply) said he did not think he reached, in the case he had submitted, the proper way of using the valerian; but it was the only drug that diminished the amount of urine that was passed. The great difficulty, in cases of this disease, was to keep the patient properly under observation. In his case the child was not sick but ate her meals and ran about. There was no necessity for medicine, but when it was given it was hard to keep the patient at it. He managed to keep the girl under treatment for about six weeks. The only interest he claimed for the case was that it was one of polyuria which had been kept under observation for 18 months. He tried the treatment alluded to by the President, but

found it worthless. He did not try arsenic. As to the order in which the symptoms occurred, the account of her people was not to be absolutely relied on, but they said the first symptom that attracted their attention was the excessive thirst. The fever she had was evidently typhoid. He had tried opium as a remedy in this disease, but had not had happy results from it. He hoped to have the girl under observation for a considerable time, and to be able to give the Section further information as to the case.

The Section then adjourned.

"TREATMENT."

THE new bi-monthly journal so called, of which we have received the opening numbers, promises well. "The original articles will almost invariably be upon points of treatment, and will be written by authorities on the subjects with which they deal." It is to be a "Journal of Practical Medicine and Surgery." "Short abstracts of all important new papers on practical subjects will be given, not as mere abstracts, but with critical comments." The miscellaneous matter in the numbers before us is varied, interesting and practical.

THE METRIC SYSTEM IN THE U.S. ARMY.

ON and after January 1, of the present year, it was expected that all prescriptions written by Army medical officers in the course of their official duties would have quantity expressed metrically. Notice of this requirement was given in a circular from the Surgeon-General's Office in April of last year, so that everyone concerned might familiarise himself with the equivalents of ounces and fluid ounces, drachms, scruples and grains in grams, cubic centimetres and their decimal fractions. It appears, however, that some medical officers found it difficult to get out of the old rut and continued the use of the hieroglyphics and Roman numerals. This was discovered by Surgeon-General Sternberg in his recent inspection of the medical departments of certain military posts. A new circular has therefore been issued, calling attention to this, and stating in positive terms that failure to make use of the metric system will be regarded as a wilful disobedience of orders. Inspecting officers are requested to report officially, through regular military channels, any failure to comply with the instructions promulgated relating to the use of the metric system.—*Jour. Am. Med. Assoc.*

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D. Univ. Dubl.;
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VITAL STATISTICS

For four Weeks ending Saturday, June 19, 1897.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	May 29	June 5	June 12	June 19		May 29	June 5	June 12	June 19
Armagh -	14.0	21.0	21.0	21.0	Lisburn -	8.5	12.8	4.3	25.7
Ballymena	5.6	16.9	11.3	16.9	Londonderry	28.3	22.0	14.1	12.6
Belfast -	27.6	25.0	21.1	20.2	Lurgan -	18.2	31.9	9.1	13.7
Carrickfergus	17.5	17.5	11.7	11.7	Newry -	16.1	24.1	16.1	8.1
Clonmel -	4.9	9.8	14.6	4.9	Newtownards	45.4	5.7	22.7	22.7
Cork -	26.3	15.2	20.8	22.8	Portadown -	18.6	43.3	18.6	18.6
Drogheda -	11.4	26.6	3.8	11.4	Queenstown	5.7	28.7	11.5	5.7
Dublin -	26.8	23.9	21.8	19.1	Sligo -	25.4	15.2	30.5	20.3
Dundalk -	4.2	16.8	4.2	8.4	Tralee -	16.8	11.2	11.2	22.4
Galway -	30.2	45.3	26.4	3.8	Waterford -	31.8	9.9	13.9	19.9
Kilkenny -	23.6	42.5	33.0	23.6	Wexford -	27.1	22.6	13.5	22.6
Limerick -	18.2	26.7	39.3	8.4					

In the week ending Saturday, May 29, 1897, the mortality in thirty-three large English towns, including London (in which the rate was 14.9), was equal to an average annual death-rate of 16.6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21.7 per 1,000. In Glasgow the rate was 20.6. In Edinburgh it was 26.9.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 25·1 per 1,000 of their aggregate population, which, for the purposes of this return, is estimated at 984,720.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in fifteen of the districts to 7·0 in Armagh—one of the two deaths registered in that district being from enteric fever. Among the 149 deaths from all causes registered in Belfast are 2 from measles, 4 from whooping-cough, 9 from enteric fever, and 2 from diarrhoea. The 38 deaths in Cork comprise 1 from measles, and 4 from whooping-cough.

In the Dublin Registration District the registered births amounted to 176—93 boys and 83 girls; and the registered deaths to 190—99 males and 91 females.

The deaths, which are 28 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·3 in every 1,000 of the population. Omitting the deaths (numbering 10) of persons admitted into public institutions from localities outside the district, the rate was 26·8 per 1,000. During the first twenty-one weeks of the current year the death-rate averaged 36·6, and was 6·7 over the mean rate in the corresponding period of the ten years 1887–1896.

Twenty-one deaths from zymotic diseases were registered, being 2 in excess of the average for the corresponding week of the last ten years, and 4 over the comparatively low number registered in the week ended May 22, but 17 under the lowest number for any of the first 18 weeks of the year. They comprise 5 from measles, 3 from scarlet fever (scarlatina), 2 from influenza and its complications, 2 from whooping-cough, 1 from enteric fever, 2 from diarrhoea, 2 from dysentery, and 1 from erysipelas.

The number of cases of measles admitted to hospital was 12, being 4 under the admissions in each of the two weeks preceding. Sixteen patients were discharged, and 38 remained under treatment on Saturday, being 4 under the number in hospital on that day week.

The weekly number of cases of scarlatina admitted to hospital, which had risen from 16 in the week ended May 8 to 30 in the following week, and 31 in the week ended May 22, fell to 23. Twenty-four patients were discharged, 2 died, and 106 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week. This number is exclusive of 29 convalescents under treatment at Beneavin, Glasnevin.

Nine cases of enteric fever were admitted to hospital, being 3 under the admissions in the preceding week, and 1 over those in the week ended May 15. Eight patients were discharged, and 37 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system, which had risen from 30 in the week ended May 15, to 37 in the week ended May 22, fell to 32, but this number is 5 in excess of the average for the corresponding week of the last 10 years. The 32 deaths comprise 18 from bronchitis and 12 from pneumonia.

In the week ending Saturday, June 5, the mortality in thirty-three large English towns, including London (in which the rate was 15·4), was equal to an average annual death-rate of 17·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·3 per 1,000. In Glasgow the rate was 19·3, and in Edinburgh it was 24·4.

The average annual death-rate in the twenty-three principal town districts of Ireland was 23·1 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·7 per 1,000, the rates varying from 0·0 in thirteen of the districts to 14·0 in Armagh—the 3 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 135 deaths from all causes registered in Belfast are 3 from measles, 1 from scarlatina, 8 from whooping-cough, 1 from diphtheria, 1 from simple continued fever, 14 from enteric fever, and 2 from diarrhœa. The 22 deaths in Cork comprise 1 from measles, 2 from whooping-cough, and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 164—85 boys and 79 girls; and the registered deaths to 169—85 males and 84 females.

The deaths, which are 8 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·2 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000. During the first twenty-two weeks of the current year the death-rate averaged 36·0, and was 6·4 over the mean rate in the corresponding period of the ten years 1887–1896.

The number of deaths from zymotic diseases registered was 17, being 2 under the average for the corresponding week of the last ten

years, and 4 under the number for the previous week. The 17 deaths comprise 3 from measles, 2 from scarlet fever (scarlatina), 2 from influenza and its complications, 3 from whooping-cough, 1 from cerebro-spinal meningitis, 1 (in the Richmond District Lunatic Asylum) from *béri-béri*, and 2 from dysentery.

The number of cases of measles admitted to hospital was 11, being 1 under the admissions in the preceding week. Eleven measles patients were discharged, 1 died, and 37 remained under treatment on Saturday, being 1 under the number in hospital on that day week.

Twenty-four cases of scarlatina were admitted to hospital, being 1 in excess of the admissions in the preceding week, but 7 under the number admitted during the week ended May 22. Fifteen patients were discharged, 1 died, and 114 remained under treatment on Saturday, being 8 over the number in hospital at the close of the preceding week. This number does not include 27 convalescents at Beneavin.

The number of cases of enteric fever admitted to hospital was 8, being 1 under the admissions in the preceding week, and 4 under the number for the week ended May 22. Seven patients were discharged, and 38 remained under treatment on Saturday, being 1 over the number in hospital on that day week.

Diseases of the respiratory system caused 33 deaths, being 6 over the average for the corresponding week of the last ten years, and 1 over the number for the previous week. The 33 deaths consist of 19 from bronchitis, 10 from pneumonia, and 4 from croup.

In the week ending Saturday, June 12, the mortality in thirty-three large English towns, including London (in which the rate was 13·8) was equal to an average annual death-rate of 15·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·3 per 1,000. In Glasgow the rate was 19·9, and in Edinburgh it was 26·3.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 20·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in sixteen of the districts to 6·2 in Portadown—the 3 deaths from all causes registered in that district comprising 1 from measles. Among the 114 deaths from all causes registered in Belfast are 1 from scarlatina, 3 from whooping-cough,

1 from diphtheria, 1 from simple continued fever, 6 from enteric fever, and 1 from diarrhœa. The 30 deaths in Cork comprise 1 from measles and 1 from whooping-cough. Among the 28 deaths in Limerick are 3 from scarlatina and 1 from enteric fever. The 7 deaths in Waterford comprise 2 from scarlatina.

In the Dublin Registration District the registered births amounted to 205—106 boys and 99 girls ; and the registered deaths to 150—77 males and 73 females.

The deaths, which are 7 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·4 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 21·8 per 1,000. During the first twenty-three weeks of the current year the death-rate averaged 35·4, and was 6·0 over the mean rate in the corresponding period of the ten years 1887–1896.

Only 15 deaths from zymotic diseases were registered, being 4 below the average for the corresponding week of the last ten years, and 2 under the number for the previous week. They comprise 2 from measles, 4 from scarlet fever (scarlatina), 4 from whooping-cough, 1 from diphtheria, 2 from enteric fever, and 1 from diarrhœa.

Eleven cases of measles were admitted to hospital, being equal to the admissions in the preceding week. Fifteen measles patients were discharged, 1 died, and 32 remained under treatment on Saturday, being 5 under the number in hospital at the close of the preceding week.

The cases of scarlatina admitted to hospital numbered 27, being 3 in excess of the admissions in the preceding week, and 4 over the number for the week ended May 29, but 4 under that for the week ended May 22. Twenty-three patients were discharged, 3 died, and 115 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week. This number is exclusive of 26 patients at Beneavin.

The weekly number of cases of enteric fever admitted to hospital declined to 7. Eleven patients were discharged, one died, and 33 remained under treatment in hospital on Saturday, being 5 under the number in hospital on that day week.

Death from the diseases of the respiratory system, which numbered 32 in the week ended May 29th, and 33 in the following week, fell to 18, or 9 under the average for the corresponding week of the last ten years. The 18 deaths consist of 10 from bronchitis and 8 from pneumonia.

In the week ending Saturday, June 19, the mortality in thirty-three large English towns, including London (in which the rate was 14·6), was equal to an average annual death-rate of 15·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·4 per 1,000. In Glasgow the rate was 18·8, and in Edinburgh it was 20·5.

The average annual death-rate in the twenty-three principal town districts of Ireland was 18·3 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the twenty-three districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in fifteen of the districts to 7·0 in Armagh—the 3 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 109 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 1 from whooping-cough, 6 from enteric fever, and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 188—98 boys and 90 girls; and the registered deaths to 132—65 males and 67 females.

The deaths, which are 40 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 19·7 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 19·1 per 1,000. During the first twenty-four weeks of the current year the death-rate averaged 34·8, and was 5·6 over the mean rate in the corresponding period of the ten years 1887–1896.

The number of deaths from zymotic diseases registered was 21, being equal to the average for the corresponding week of the last ten years, but 6 over the low number registered in the week previous. The 21 deaths comprise 1 from measles, 2 from scarlet fever (scarlatina), 4 from influenza and its complications, 6 from whooping-cough, 3 from diphtheria, 1 from enteric fever, and 1 from diarrhœa.

The number of cases of measles admitted to hospital was 8, being 3 under the admissions in the preceding week. Five measles patients were discharged, and 35 remained under treatment on Saturday, being 3 over the number in hospital on that day week.

The weekly number of cases of scarlatina admitted to hospital, which had risen from 24 in the week ended June 5 to 27 in the following week, fell to 12. Nine patients were discharged; 1 died, and 117 remained under treatment on Saturday, being 2 over the number in hospital at the close of the preceding week. This number is exclusive of 26 convalescents at Beneavin.

Only 4 cases of enteric fever were admitted to hospital, being 3 under the admissions in the preceding week and 4 under the number admitted in the week ended June 5. Nine patients were discharged, and 28 remained under treatment on Saturday, being 5 under the number in hospital on that day week.

Deaths from diseases of the respiratory system, which had fallen from 33 in the week ended June 5 to 18, in the following week further declined to 15, or 11 under the average for the corresponding week of the last ten years. The 15 deaths comprise 9 from bronchitis, 3 from pneumonia, and 1 from croup.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of June, 1897.

Mean Height of Barometer, -	-	-	29.999 inches.
Maximal Height of Barometer (on 3rd, 9 a.m.),			30.223 „
Minimal Height of Barometer (on 18th, 7 a.m.),			29.348 „
Mean Dry-bulb Temperature,	-	-	57.5°.
Mean Wet-bulb Temperature,	-	-	54.9°.
Mean Dew-point Temperature,	-	-	52.4°.
Mean Elastic Force (Tension) of Aqueous Vapour,			.398 inch.
Mean Humidity, -	-	-	83.8 per cent.
Highest Temperature in Shade (on 22nd),	-		73.7°.
Lowest Temperature in Shade (on 19th),	-		43.0°.
Lowest Temperature on Grass (Radiation) (on 19th),	-	-	40.6°.
Mean Amount of Cloud,	-	-	67.5 per cent.
Rainfall (on 20 days),	-	-	3.257 inches.
Greatest Daily Rainfall (on 8th),	-	-	.660 inch.
General Directions of Wind,	-	-	E., N.W.

Remarks.

Although the rainfall and rainy days were in excess of the average, and the amount of cloud was large, June, 1897, must be regarded as a favourable month, conducive to health and propitious to vegetation. It is a remarkable fact that with a preponderance of easterly and north-westerly winds, the relative humidity was very high, and radiation temperatures by night were not low. Fog was observed on as many as seven occasions—an unusual feature in June. It is also noteworthy that the percentage of cloud was higher at 9 p.m. (68.3°) than at 9 a.m. (66.7°). There was a very cold spell from the 15th to the 20th.

In Dublin the arithmetical mean temperature (58.7°) was above the average (57.8°) by 0.9° ; the mean dry bulb readings at 9 a.m. and 9 p.m. were 57.5° . In the thirty-two years ending with 1896, June was coldest in 1882 (M. T. = 55.8°), and in 1879 ("the cold year") (M. T. = 55.9°). It was warmest in 1887 (M. T. = 62.3°); in 1865 (M. T. = 61.0°); and in 1896 (M. T. = 61.4°).

The mean height of the barometer was 29.999 inches, or 0.082 inch above the corrected average value for June—namely, 29.917 inches. The mercury rose to 30.223 inches at 9 a.m. of the 3rd, and fell to 29.348 inches at 7 a.m. of the 18th. The observed range of atmospheric pressure was, therefore, 0.875 inch.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 57.5° , or 7.0° above the value for May, 1897. Using the formula, *Mean Temp.* = *Min.* + (*max.* - *min.* $\times .465$), the value was 58.2° , or 1.0° above the average mean temperature for June, calculated in the same way, in the twenty-five years, 1865-89, inclusive (57.2°). The arithmetical mean of the maximal and minimal readings was 58.7° , compared with a twenty-five years' average of 57.8° . On the 22nd the thermometer in the screen rose to 73.7° —wind, S.W.; on the 19th the temperature fell to 43.0° —wind, W.S.W. The minimum on the grass was 40.6° , also on the 19th.

The rainfall amounted to 3.257 inches, distributed over 20 days. The average rainfall for June in the twenty-five years, 1865-89, inclusive, was 1.817 inches, and the average number of rainy days was 13.8. The rainfall, and the rainy days, therefore, were much above the average. In 1878 the rainfall in June was very large—5.058 inches on 19 days; in 1879, also, 4.046 inches fell on 24 days. On the other hand, in 1889, only .100 inch was measured on 6 days; in 1887, the rainfall was only .252 inch, distributed over only 5 days. In 1896, 1.883 inches fell on 14 days.

High winds were noted on 7 days, but the force of a gale was attained only on the 16th and 19th. The atmosphere was more or less foggy on the 2nd, 3rd, 5th, 8th, 23rd, 28th and 29th. Temperature reached or exceeded 70° in the screen on 6 days, compared with 17 days in 1887, only 1 day in 1888, and 9 days in 1896. A thunderstorm occurred on the 12th, and lightning was seen on the 22nd. Solar halos were observed on the 5th and 28th.

Changeable but favourable weather was experienced during the period ended Saturday, the 5th. On Tuesday, June 1st, an anticyclone spread south-westwards from Scandinavia to Scotland, while a shallow trough of low pressure stretched across the southern parts of Ireland and England to the East of France.

Within this area dull rainy weather was prevalent, and severe thunderstorms occurred in many parts of England, especially over the south-eastern countries. These electrical disturbances afterwards spread northwards with lessening intensity, but Ireland escaped. Towards the close of the period a general and considerable rise of temperature took place and there was a good deal of bright sunshine. Friday, however, was at first dull and rainy in and about Dublin, a very shallow barometric depression having apparently drifted westward from Lancashire and North Wales during Thursday night. The sky cleared about mid-day and very fine summerlike weather set in, lasting to the close of the period. The atmosphere was very thick on Saturday. In Dublin the range of pressure was from 29·911 inches, at 9 p.m. of Tuesday, the 1st (wind S.) to 30·223 inches at 9 a.m. of Thursday (wind E.) On Thursday the screened thermometers fell to 44·0°, on Saturday they rose to 69·3°. The rainfall was ·340 inch on three days, ·280 inch being registered on Tuesday, the 1st. The prevailing wind was S.E.

Changeable weather was experienced during the week ended Saturday, the 12th, which opened and closed with warmth, the intervening period being very cold for the time of year. A rain storm of much intensity prevailed in Ireland, the southern half of England, and Belgium on Tuesday night, extending into Germany on Wednesday. The measurement of rain during the storm was ·67 inch in Dublin, ·64 inch in London, ·82 inch at Loughborough, 1·13 inches at Oxford, 1·22 inches at Cambridge, and 1·43 inches at Hurst Castle. The rainfall took place near the centre of a long trough of low atmospheric pressure, which stretched on Wednesday morning east-south-eastwards from the S.W. of Ireland to Belgium and the E. of France. To the southward of this line the wind was S.W. to W., to the northward it was easterly in direction, and temperature was very low. From Scotland, at this time, fine, cool, dry weather was reported, with very low night temperatures—at Nairn the screened thermometer fell to 31° on Monday night and to 34° on Tuesday night. The low-pressure system quickly filled up and dispersed, and a brisk rise of the barometer took place. On Thursday moderate gradients for S.W. winds formed over Ireland, where temperature rose fast. On Friday, for the first time this season, the shade thermometer rose above 70° (to 73·2°) in Dublin. Saturday also was fair and warm, but the sky became overcast and the air was heavy and sultry, a few drops of rain falling at intervals. After 9 45 p.m. rain fell heavily, followed by a sharp thunderstorm. In Dublin the mean height of the barometer

was 30·050 inches, the range being from 29·720 inches at 7 a.m. of Wednesday (wind, E.N.E.) to 30·180 inches at 8 30 a.m. of Saturday (wind E.S.E.). The corrected mean temperature was 58·8°, the mean dry bulb reading at 9 a.m. and 9 p.m. being 58·0°. The screened thermometers fell to 49·2° on Wednesday and rose to 73·2° on Friday. The rainfall was 1·020 inches on five days, ·660 inch being recorded on Tuesday. Easterly winds prevailed.

The weather was in a troubled state throughout the week ended Saturday, the 19th—at least in Ireland and Scotland. In England it remained fine and warm until Wednesday, but from that day onward unsettled conditions held there as elsewhere. On Sunday, at 8 a.m., the thermometer stood at 75° in London, and later in the day it reached 84°. At this time a shallow depression lay over the S. of Ireland, causing dull and drizzling weather. By Monday this system had drifted north-eastwards to the North Sea, and had grown deeper, causing heavy rains in parts of Scotland. In Ireland a brisk N.W. wind brought finer and colder weather for the time being. On Tuesday a new and much deeper depression advanced across Ireland. It reached the S. of Scotland by Wednesday morning, having caused a disastrous gale and down-pours of rain in many places. At Ardrossan the rainfall amounted to 2·27 inches up to 8 a.m. of Wednesday. Harsh, cold N.W. winds blew with much violence in the rear of the centre. Scarcely had this disturbance passed away when another followed it, bringing severe S.W. gales to the English Channel. On Saturday again a depression passed over Ireland, where heavy rain fell for several hours. In the evening of this day temperature rose considerably, having been as low as 43° on Friday night. In Dublin the mean atmospheric pressure was 29·898 inches, the barometer rising to 30·211 inches at 9 p.m. of Monday (wind, W.N.W.), and falling to 29·348 inches at 7 a.m. of Friday (wind, N.W.). The corrected mean temperature was 54·7°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 54·4°. On Sunday the shade thermometers rose to 67·0°, on Saturday they fell to 43·0°. The rainfall was 1·112 inches on six days, ·459 inch being measured on Saturday. The prevalent wind was N.W. At Glasgow the rainfall was as much as 4·25 inches, and even at Edinburgh it was 3·27 inches.

A very marked advance in temperature is the most striking feature in the weather-record of the week ended Saturday, the 26th. On Sunday morning the centre of a depression, which had caused a general and in places heavy rainfall the previous day or night, was found over Norfolk. In Ireland the weather was fine and dry, but cloudy, with a brisk N.W. wind. In the afternoon

slight rain fell. An anticyclone now began to spread northwards from France, throwing a warm S.W. wind upon the British Isles, where the weather became fine and summerlike. Tuesday—the day set apart for the Queen's Diamond Jubilee celebration—was cloudy to fair in London, brilliant in Dublin, where the thermometer rose to $73\cdot7^{\circ}$. In the evening and at night sheet lightning was observed, thunderstorms being reported from Valentia and Parsonstown. On Wednesday afternoon or in the ensuing night a brisk fall of temperature occurred in the N. of England and in Ireland, accompanied by a sea fog on the east coast of Ireland. In the centre and S. of England, on the contrary, the heat increased, so that in London the maximum was 85° on Wednesday and 90° on Thursday. At 8 a.m. of this latter day the thermometer read 77° in London, but only 51° at Shields. In the afternoon of Thursday severe thunderstorms broke out over the east and south-east of England, where temperature fell rapidly. The rainfall accompanying the storm amounted to $\cdot36$ inch at Brixton in the S. of London. Fine weather held afterwards to the end of the week. In Dublin the mean height of the barometer was $30\cdot004$ inches, pressure ranging between $29\cdot842$ inches at 9 a.m. of Sunday (wind, N.W.) and $30\cdot086$ inches at 9 a.m. of Tuesday (wind, S.W.). The corrected mean temperature was $60\cdot7^{\circ}$. The mean dry bulb reading at 9 a.m. and 9 p.m. was $59\cdot7^{\circ}$. On Sunday the screened thermometers fell to $50\cdot8^{\circ}$, on Tuesday they rose to $73\cdot7^{\circ}$. Rain fell on four days to the amount of $\cdot162$ inch, $\cdot123$ inch being measured on Wednesday. The wind was generally light in force and variable in direction.

While warm and for the most part summerlike, the weather of the closing period of the month (27th–30th, inclusive) was changeable. On the night of Sunday, the 27th, a heavy fall of rain ($\cdot450$ inch) took place. The 28th broke foggy and damp, but in the end proved fine. At 4 p.m. a solar halo was seen. Another considerable fall of rain occurred at night. The last two days were fine and warm, after cloudy, dull mornings.

The rainfall in Dublin during the six months ending June 30th amounted to $13\cdot950$ inches on 113 days, compared with $7\cdot854$ inches on 84 days in 1896, $12\cdot282$ inches on 80 days in 1895, $14\cdot361$ inches on 109 days in 1894, $9\cdot624$ inches on 78 days in 1893, $11\cdot770$ inches on 97 days in 1892, $8\cdot748$ inches on 77 days in 1891, $13\cdot413$ inches on 94 days in 1890, $10\cdot576$ inches on 97 days in 1889, $12\cdot113$ inches on 87 days in 1888, $6\cdot741$ inches on 67 days in 1887, and a twenty-five years' average of $12\cdot313$ inches on 95·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 4·005 inches, distributed over 16 days. Of this quantity 1·020 inches fell on the 8th, and ·780 inch on the 27th. The total fall since January 1 has been 18·125 inches on 106 days, compared with 7·356 inches on 61 days in the first six months of 1896, 14·270 inches on 67 days in 1895, 17·381 inches on 96 days in 1894, and 11·776 inches on 75 days in 1893.

The rainfall at Cloneevin, Killiney, Co. Dublin, amounted to 3·59 inches on 20 days. The greatest fall in 24 hours was 1·21 inches on the 8th. The average rainfall for June in the 12 years, 1885–1896, was 1·515 inches on 11·7 days. In 1895, 1·94 inches fell on 12 days, in 1896 1·65 inches fell on 13 days. Since January 1, 1897, 14·80 inches of rain have fallen at this station on 113 days, compared with 6·98 inches on 70 days in the corresponding six months of 1896.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 4·078 inches on 15 days. On the 8th, 1·020 inches were measured, and on the 27th, ·830 inch. The maximum temperature in the shade was 73·8° degrees on the 26th, the minimum temperature in the shade was 42·0° on the 3rd. At this climatological station the rainfall for the six months ending June 30, amounted to 18·372 inches on 102 days.

PERIOD OF DENTITION.

DR. J. LEWIS SMITH kept records of the average time of appearance of the teeth in children at the out-door department of Bellevue Hospital, excluding cases of rickets, which were most common in Italians and next in negroes. In 200 infants without signs of rickets the first tooth had appeared as follows:—In 3 infants at two months, in 20 at five months, in 24 at six months, in 37 at seven months, in 28 at eight months, in 20 at nine months, in 14 at ten months, in 15 at eleven months, in 8 at twelve months, and in 1 at thirteen months of age. Yet Sir William Jenner had said that if a baby did not get its first teeth by the ninth month it indicated rickets.—*Med. Rec.*

THE POPULATION OF FRANCE.

THE Report of the Census of 1896 of France and Algeria shows an increase of the population of France, including Corsica—38,517,973 on the 29th March last—of 299,072 in the decennial period. The increase, such as it is, is not due to the immigration of foreigners, which has diminished.

PERISCOPE.

AN ARITHMETICAL PRODIGY.

THE *Giornale della Reale Società Italiana d'Igiene* notices a case of remarkable arithmetical power which was brought before the Society of Anatomy and Physiology of Bordeaux. A young man of 27 possessed since he was 10 years of age the power of counting without difficulty, or hesitation, the letters constituting sentences, thought, spoken, or written. He felt obliged to count them; and the continuous enumeration caused no fatigue, nor did it interfere with the performance of his duties in a commercial house, nor with conversation or reading a book, or following a process of reasoning. He had never attempted to acquire this power, nor had it improved since he first felt compelled to exercise it. The letters of the words that he enumerated seemed printed before his eyes. The month of the year and the day of the week seemed similarly impressed; January and Monday in bright white, subsequent months and days in deepening shades of grey, until December and Sunday which appeared black.

BÉRI-BÉRI.

BÉRI-BÉRI is in the Dutch Indies one of the most pernicious diseases. It does not lead to death immediately, but ends in a general or particular paralysis of limbs, hands and legs. There was no cure of it, however, till now. The disease had been noticed first at Abjeh, some twenty years ago, as of epidemic standing. It was thought it befell only the natives, but among the many hundred men sick of béri-béri and brought to Batavia there were found many European soldiers. The infectious matter was then derived from the soil, which had been thrown up and ploughed through by military works. About 1885, when the plague seemed to dissolve and lessen the army, Professor Pekelharing, from Utrecht, a renowned bacteriologist, was sent to Abjeh to study the disease even in its place of birth, to find out its bacilli, and, if possible, also a cure against it. In these directions Professor Pekelharing failed entirely. He returned without any result, and the disease went on. Now, Dr. Eykmann, physician in the Dutch military service, seems to have been happier than his colleague and countryman. Dr. Eykmann, conceived the idea that béri-béri had nothing to do with the soil but with the food given the soldiers. The natives there live on

rice as their exclusive food and the Europeans also in these regions take to it. Now Dr. Eykmann had marked that those soldiers were taken with béri-béri who got the Saigun rice, but those fed on the native "red" Sumatra rice remained healthy. In the prison at Sourabaya he found likewise that while on July 1, 1896, ninety-nine prisoners out of 800 had been caught by béri-béri this cipher fell to 86, 82, 43, 21 and 13 during the next month on account of giving the Sumatra rice instead of the Saigun rice. Surely Dr. Eykmann's theory has not yet any scientific foundation, but a mark is found and a practical sign which, no doubt, will lead us sooner or later to the discovery of the growth and evolution of infectious material in the human body.—*Journ. Am. Med. Assoc.*

CIGARETTES.

AN Anticigarette Bill has been introduced into the Legislature of this State (New York), and has been reported favourably by the committee on public health. The bill forbids the sale of cigarettes to minors, and provides that dealers in cigarettes shall pay a license fee. The bill also prohibits the sale of cigarettes within two hundred and fifty feet of a church or school.—*Med. Record.*

COD-LIVER OIL IN TUBERCULOSIS.

DR. ARROWSMITH, of Brooklyn, is the author of a bright little pamphlet on the modern aspects of tuberculosis, in the course of which he pays his respects to the hypophosphites and to cod-liver oil. As to the latter, he says that cod-liver oil has been administered as a matter of routine in larger quantities than any other remedy. His personal experience has led him to the opinion that it is very much worse than useless. The most that he has ever felt justified in hoping from it has been that it would not do harm. He has never seen it act beneficially. Patients who improve during its administration do very much better, as a rule, after discontinuing its use. "It disturbs digestion and prevents the utilisation of other and more valuable forms of food stuffs."—*Journ. Am. Med. Assoc.*

VIOLENT DEATHS IN U.S.

THE *Journ. Amer. Med. Association* quotes the following statistics from the *Chicago Tribune*. The alarming increase in the number of murders and suicides in this country is shown from statistics recently collated as they relate to 1895 compared with preceding years. From these it appears that the number of murders (including homicide) in the United States attained last year the un-

precedented figure of 10,500, as compared with 9,800 in 1894, 4,290 in 1890, and 1,808 in 1885. Hence the increase of homicidal crime is of a most rapid and serious nature. The suicides in 1895 numbered 5,750, as compared with 4,912 in 1894, 2,040 in 1890, and 978 in 1885. The legal executions in 1895 were 132, being the same as in 1894, whereas in 1890 they were 102, and 108 in 1885. The "lynchings" or illegal executions were 171 in 1895, as compared with 194 in 1894, 127 in 1890, and 108 in 1885. Hence, there was a decrease of 23 last year as compared with 1894. But both as regards legal and illegal executions in the United States there is an extraordinary difference between the ratio of increase in the two classes and the amazingly rapid development of murder of recent years. Thus, the combined legal and illegal executions for the 1,808 murders in the year 1885 were 289, or nearly as many as the combined number (303) for the 10,500 murders in 1895.

L'ÉCHO MÉDICAL DU NORD.

WE have received the opening numbers of this new journal, published at Lille. In one way it is probably unique in the medical press—it appears on Sunday mornings. Its list of contributors, distinguished representatives of every department of the profession, promises well, and the numbers before us fulfil the promise.

CIRCUMCISION.

THE practice of direct suction by the operator after the ritual removal of the prepuce having, says *L'Écho Médical du Nord*, been productive of many accidents, the use of a small glass tube, with an enlargement filled with cotton wool, has been adopted in Holland and Germany. The suggestion originated with M. von. Pettenkofer, of Munich.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Bovril "Stamnoids."

THESE tablets, which are said to possess wonderfully sustaining and stimulating properties, are not to be confounded with ordinary meat lozenges. Bovril "stamnoids," as they are called, contain in a specially concentrated but easily digestible form the concrete elements of muscle and energy. All that is not capable of being readily converted into muscle or force has been carefully eliminated in their preparation, so that bovril stamnoids have been described as "the highest conceivable form of vital nourishment in the

smallest possible bulk." They may be used by travellers, cyclists, sportsmen, and athletes as a convenient and efficient substitute for a set meal. The stamnoids are sold in one shilling packages, which can be carried in the waistcoat pocket. They should not be masticated, but should be allowed to dissolve slowly in the mouth. Their flavour is not particularly unpleasant or their taste unpalatable. The preparation is manufactured by the Bovril Company, London.

New Tabloids for Hypodermic Medication.

MESSRS. BURROUGHS, WELLCOME & Co., of Snow Hill Buildings, London, E.C., have prepared the following new tabloids:—

Potassium Permanganate Hypodermic "Tabloids."—In view of the increasing clinical evidence of the value of potassium permanganate as an antidote to opium and morphin poisoning, hypodermic "tabloids," each containing 2 gr. of the drug, are now issued. These "tabloids" are readily soluble, and certainly provide the best means of putting the treatment into practice. It is stated that one grain of potassium permanganate antagonises one grain of morphin sulphate, even when the poison is absorbed into the system, and upon this the dosage is founded. The usual strength of the injection is 1 in 100. The certainty of instantly obtaining a perfectly sterile solution for injection is always ensured by the use of hypodermic "tabloids." They are supplied in tubes containing twelve each.

Hypodermic "Tabloids"—*Ergotinin Citrate and Strychnin Sulphate.*—The advantages of ergotinin over the aqueous extract of ergot in hypodermic injections are well known. The addition of a salt of strychnin secures enhanced therapeutic effect. The combination should prove useful in uterine hæmorrhage, in vaso-motor neurosis, cephalalgia, and hemicrania. Ergotinin is also said to be valuable when administered hypodermically in diabetes insipidus, paralysis of the bladder, varicose veins and varicocele. The full dose of ergotinin citrate is $\frac{1}{30}$ gr., the general method being to inject one "tabloid," and repeat if necessary. The use of the "tabloid" is a protection against overdosage as the amount of its constituents is accurately adjusted. These "tabloids" may be also administered by the mouth, and with special benefit in the case of patients in whom a tendency to post-partum hæmorrhage is known to exist. Recent reports have been received indicating the advisableness of commencing treatment in such cases two or three weeks prior to labour. Hypodermic "tabloids" of ergotinin citrate $\frac{1}{100}$ gr. and strychnin sulphate $\frac{1}{20}$ gr. are supplied in tubes containing twelve.

THE DUBLIN JOURNAL

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MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*The Use of Ergot in Obstetrics.*^a By THOMAS MORE MADDEN, M.D., F.R.C.S.E., M.A.O. (*Honoris Causâ*), Royal University of Ireland; Obstetric Physician and Gynæcologist, Mater Misericordiæ Hospital, Dublin; Consultant and ex-Master, National Lying-in Hospital; Consulting Physician to the Children's Hospital; &c.

THE position of the practitioner who, after an extended obstetric experience, finds himself returning, as I now do, to a question, such as the use of ergot in obstetrics, in the discussion of which he has previously taken part, and which long before he entered the profession, or the world, had been well debated and apparently settled, may perhaps serve to recall the task of Sisyphus as described by the poet—

“With endless endeavour,
For ever, for ever,
Is Sisyphus rolling
His stone up the mountain.”

Nevertheless, that it is not so superfluous as it might thus seem to reconsider this subject at the present time can, I think, be easily proved.

In few respects are the changes effected in midwifery

^a Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, Friday, April 23, 1897. [For the discussion on this paper, see page 244.]

practice since my student days more marked than with regard to the obstetric use of ergot. At that time this drug was very generally, and often with too little discrimination, given in the majority of labour cases. A few years later the reaction which was inevitable against such a malpractice set in; and this has continued to operate and increase up to the present time, when, the pendulum of professional opinion having swung back to the opposite extreme, comparative desuetude has replaced the former abuse of the most potent ecbolic within our command.

That result has been fostered by the teachings of some recent writers, whose commonly accepted views have led to the general abandonment even in, as I think, appropriate cases of the obstetric employment of ergot by the rising generation of practitioners. For, if the doctrines on this point so expounded—and which as my own experience as an examiner and a consultant in this branch of medicine has shown me are largely adopted by my junior colleagues—may be taken as a sufficient indication, there can be no doubt that the trend of modern midwifery opinion is distinctly adverse to the administration of ergot during labour. Thus, for instance, Dr. Playfair, whose authority on this point is widely conceded, speaking of the use of ergot in tedious parturition, says—"Its effect is indeed to produce that very state of tonic and persistent uterine contraction which has already been pointed out as one of the causes of protracted labour."^a Professor Lusk observes—"Ergot should never be exhibited in the first stage of labour. . . . We should also abstain from the use of ergot in the second stage unless it seems necessary as a prophylactic against *post-partum* hæmorrhage."^b Dr. Winkell is opposed to the employment of ergotin in obstetrics, and allows the use of ergot only in homœopathic and, as I believe, utterly inefficient doses. "It will be seen," he remarks, "that ergotin cannot be used very often. On the contrary, I have recently prescribed the fluid extract in 12-drop doses."^c Still more emphatic, however, is the condemnation of ergot in labour

^a Playfair. Science and Art of Midwifery. Vol. II. P. 10.

^b Lusk. Science and Art of Midwifery. Pp. 461. London. 1896.

^c Winkell. Text-book of Obstetrics. P. 513. Edinburgh. Edition 1890.

cases pronounced by Dr. Hosacks, who observes "that the designation of *pulvis ad partum* applied to it in some of the old works on obstetrics might fairly, as regards the child, be modified to *pulvis ad mortem*."

Whether the views thus formulated and the reaction so effected against the use of ergot during parturition are altogether correct in theory and advantageous in practice, or not, may be now briefly considered.

Physiological Action of Ergot and its Constituents.—In discussing the obstetric use of ergot, the physiological action of its various constituents cannot be altogether omitted from consideration. On the latter point it must, I think, be admitted that opinions which by some authors of obstetric text-books have been adopted, from the published researches of recent scientists, who, in the physical laboratory, have investigated the composition as well as the action on lower animals of the several constituents of ergot, are by no means conclusive or identical with the results of clinical experience of the same agents in the case of parturient women. As a matter of fact, neither the chemical composition of ergot, nor the effects of its several products, are as yet determined, for, as Mr. Squire has observed in the last edition of his work, the chemistry of ergot is so complicated, and the workers so utterly at variance both as to its chemical constituents and their physiological action, that it is impossible to lay down any definite lines on which its Galenical preparations should be made.^a In his lecture on this subject Professor Plowright cites Kobert (who, however, has since been flatly contradicted by Tanneret), and, according to that authority, the active constituents of ergot are ergotinic acid, sphacelinic acid, and cornutin. The first named is the principal constituent of Dragendorff's sclerotinic acid, and is also contained in Bonjean's ergotin, and in our official liquid extract. When injected subcutaneously it reduces the blood-pressure and gives rise to nervous derangements, such as inco-ordinate movements, loss of the reflexes, paralysis; and it causes death from failure of the respiratory process. It is without action

^a Squire. Companion to the British Pharmacopœia. Sixteenth Edition. London. 1894.

on the uterus; when taken by the mouth it becomes split up into inert by-products, so as to be without action on the animal organism.

Sphacelinic acid, on the other hand, is a very energetic poison; it is the gangrene-producing constituent of ergot, insoluble in water, dissolved with difficulty in alcohol, but soluble in oils, chloroform, and ether. Fowls fed on it, made into pellets with meal, soon showed gangrene of the combs and wattles. Sphacelinic acid causes gangrene by inducing a hyalin thrombosis of the arterioles, at first acting locally, but afterwards by being absorbed. *Post-mortem* changes, consisting of follicular catarrh of the mucous membrane of the œsophagus, crop, and stomach, while numerous extravasations are found all along the alimentary canal in fowls which died from its effects.

The alkaloid cornutin Kobert considers to be the only ingredient suitable for therapeutic use. It is soluble in alcohol, and its chloride and citrate in water, $\frac{1}{32}$ milligramme, killed a strong frog in a few minutes. With dogs and cats, in the proportion of 5 milligrammes to the kilogramme, a peculiar and distinctive train of symptoms is induced, consisting of tremors or quivering of the body, salivation, evacuation of the contents of stomach and bowels, with great straining. The straining recurs at intervals of a few minutes, accompanied by the expulsion of flatus, fæces, and bile. The cardiac action is retarded and irregular. A large dose causes clonic—becoming tonic—spasms, resembling epileptiform convulsions, the similarity to which is heightened by the tongue of the animal being frequently bitten. Death arises from respiratory failure, which ceases before the heart's pulsations. In pregnant and non-pregnant animals it causes wave-like contractions of the uterus, but not "tetanus uteri." It acts on this organ through the lower part of the spinal cord; it raises the blood-pressure, but does not cause gangrene. Kobert considers that it is best administered in a sterilised solution. He further adds that the ergot produced in France and Spain is richer in sphacelinic acid than that of Germany and Russia; while the latter is richer in cornutin, which accounts for gangrenous ergotism being more prevalent in France and Spain, while

convulsive gangrenism occurs in Germany and Russia.* The foregoing statements may be regarded as sufficient evidence of the views now generally held with regard to ergot and its action, and also serve to support my contention that the dicta of scientists on this subject can by no means be unreservedly accepted by obstetric practitioners, by many of whom, as well as by myself, preparations such as the "*B. P.* fluid extract of ergot," and Bonjean's ergotin, both of which, according to Kobert, contain a toxic constituent of deadly potency, in the case of some of the lower animals, have long and largely been employed in midwifery cases, without, when judiciously used, producing any toxic effects whatever.

The dangers ascribed to the employment of ergot during parturition by the writers above referred to, or by others, include—1st, its possible foeticidal effects; 2nd, the probability of this ecboic giving rise to such irregular uterine action as to occasion subsequent retention of the placenta; and 3rd, the direct toxic action of the drug on the maternal system.

With regard to the first of these objections a sufficient answer has been supplied by the actual results of the employment of ergot for some time before parturition, as recorded long since by my former colleague, the late Dr. Denham, when Master of the Rotunda Hospital, and more recently and conclusively by our distinguished President, Dr. Atthill, whose observations are too fresh in our recollection to require any further reference to them in this place.

The Present Writer's Clinical Experience of Ergot.—As to the second and third of the reasons assigned, as just mentioned, for the non-employment of ergot in midwifery cases—viz., the probability of its inducing irregular or hour-glass contraction of the uterus, and so occasioning placental retention and its alleged maternal toxic action—I know not how I can more effectually deal with such objections than by a short reference to my clinical notes.

Having, however, employed ergot in a very large number of instances in my hospital and private practice during the past twenty-six years, within which period I for some time occupied the position of Master of one lying-in hospital and

* Plowright. Lecture on Ergot, &c. Lancet. April 17th, 1890.

Assistant-Master of another, it would involve a probably useless waste of time and labour, and occupy more space than might be desirable, were I to recapitulate my record of all the obstetric occasions in which I have administered this drug. It may, therefore, suffice to submit here a brief statement of the circumstances under which, in a series of one hundred and fifty midwifery cases, ergot, including any of its preparations, was found necessary, together with the results of its exhibition in each instance.

Abstract of One Hundred and Fifty Obstetric Cases in which Ergot was used.—In seventy of these cases the patients were primiparæ; in eighty they were pluriparæ. Of the one hundred and fifty patients referred to, one hundred and forty-eight recovered and two died—viz., one from septicæmia and the other from a disease that commenced prior to parturition—viz., typhoid fever.

In ninety-five of these cases the drug was given before the birth of the child—viz., in fifteen for delay occasioned by inertia of the uterus in the first stage of labour; and in eighty, for delay similarly caused, or for the prevention of hæmorrhage, or for some other complication, in the second stage. In ninety-two of these instances the children were delivered alive, either by uterine action or by the forceps. In three they were still-born, and in two of the latter cases evidence of putrefaction being apparent on delivery no toxic effect could possibly be ascribed to the ecboic administered a short time previously.

Of the ninety-five cases in which ergot was given in the first or second stages, in eighty-six the placenta was subsequently expelled by the natural efforts; in nine its removal had to be assisted by the obstetric attendant—viz., in four cases for morbid adhesions, in four for atony of the uterus, and in one for irregular or hour-glass contraction.

In fifty-five instances the ergot was given after the birth of the child—namely, in twenty-five during the third stage to hasten the expulsion of the placenta, or to prevent flooding; and in thirty immediately after the completion of labour, for the prevention or arrest of *post-partum* hæmorrhage, or for some other reason to stimulate uterine contraction.

Whilst, therefore, my own experience, as above summarised, points to the conclusion that the objections urged against the employment of ergot during labour are to a large extent devoid of substantial foundation, provided always that the drug be judiciously used, at the same time I, for one, have no desire to minimise the dangers to either mother or child that may result from its abuse. On the latter point more especially I may repeat, as I observed long since in a former paper, that under no circumstances should ergot or ergotin be given until the os uteri is fully dilated, or so dilatable as to allow delivery to be effected with the forceps—if the child be not expelled within an hour after its administration, or sooner, if any necessity for so doing should arise; as, otherwise, the “foetal circulation might very probably become arrested by the tonic or unremitting uterine action which is the characteristic effect of this drug.” That effect was also referred to in another paper of mine, in which I instanced the fact that in a series of cases, brought within my cognisance, in which ergot had been injudiciously too early used before the application of the forceps, a large proportion of the children thus delivered were still-born. Hence I would as soon entrust the use of the forceps to a student commencing midwifery attendance as allow him or a nurse to administer ergot until fully acquainted with the principles which should direct its employment, and the dangers that may result from its improper exhibition. At the same time, however, it is obvious that the effects, however disastrous, of the abuse of any remedy cannot be regarded as an argument sufficient to outweigh the clinical record of the benefits derivable from its judicious use. I may, therefore, take this opportunity of pointing out that, in my own lengthened experience of the administration of ergot in midwifery practice, I have not met with distinct evidence of those disastrous effects in any instance in which it had been properly employed. Therefore, I have no hesitation in expressing the belief that the injurious action ascribed to this remedy should to a large extent be attributed to its misuse. For instance, if ergot be given at too early a period of labour, or in the small, insufficient, and frequently-repeated doses that are now suggested, a state of irregular contraction of the

uterus is likely to be induced, by which the circulation of the foetus may be imperilled, whilst, at the same time, the dilatation of the os uteri may be arrested. On the other hand, in cases of head presentation delivery being impeded only by inertia, if ergot or ergotin be administered when the os uteri is sufficiently dilated, and is then administered in the bold, full and effective dose that I have long recommended, the result, in the majority of cases, will be the establishment of that effective uterine action, the temporary cessation of which is the most common cause of delay in the second stage of labour, and the consequent speedy and safe delivery of the child.

The Conditions and Circumstances under which Ergot may be employed in Obstetrics.—Under this heading, as will be seen, I ascribe a far wider range of utility to ergot in midwifery practice than is generally recognised. Nevertheless, I would presume to observe that my views on this point are the results of actual clinical experience, which it may not be easy to disprove by any merely theoretical objections however strongly expressed.

Judging from the recent literature of the subject it apparently is not superfluous to reiterate that to use any of the preparations of ergot safely and efficiently in the labour cases referred to it is essential—1st, that the presentation should be natural or cranial, except in some instances of breech presentation, wherein inertia must be dealt with; 2nd, that there should be no disproportion between the foetus and mother, nor any other physical obstacle to delivery in the genital tract; 3rd, that the os uteri, if not previously fully dilated, should be sufficiently dilatable to allow of speedy delivery by the forceps whenever that is necessary; 4th, that the preparation of ergot selected, the dose in which it is given, and the method in which it is employed should be well calculated to secure the desired effect.

Subject then to the foregoing conditions ergot may with utility be employed before, during, and after the second stage of labour—that is to say, it can be thus given before the full dilatation of a dilatable os, in some instances of long delay from inertia of the uterus, in which there is either (a) evident danger to mother or child, or (b) risk of subsequent

hæmorrhage from further protraction of the case. In the second stage it may be employed (*c*) in all cases of labour rendered abnormally tedious by defective uterine action, in which the presentation is natural and no other impediment to delivery existent; or (*d*) for the prophylaxis of apparently impending hæmorrhage, as well as for some other complications. During the third stage ergot may be resorted to (*e*) for the expulsion of a placenta retained by inertia; or (*f*) for the arrest of excessive loss of blood. After labour this ecboic may be exhibited either immediately (*g*) to check or prevent flooding, or subsequently (*h*) to produce such tonic or permanent contraction as will seal up the uterine vessels and so lessen the liability of bacteriological invasion or sepsis; or (*i*) for the purpose of expelling clots and so arresting after-pains. Lastly (*j*) in the majority of multiparous patients ergot can with advantage be given during the puerperal state with the object of stimulating the muscular contractibility of the uterus, and thus aiding the process of involution.

Ergot in the Prevention and Treatment of After-Pains.—Many years ago, on the suggestion of the late Dr. T. Beatty, ergot was largely employed in the Dublin School of Midwifery for the prophylaxis, and in the treatment, of after-pains. From experience I can bear the strongest testimony to the value of that now generally forgotten method of arresting this trouble. In such cases the ergot or ergotin may be employed in a similar manner and dose, as in instances of delay from uterine inertia in the second stage of labour, or in those of *post-partum* hæmorrhage. In the former cases the ergot probably acts, as conjectured, by causing a perfect and permanent contraction of the muscular fibre of the uterus, and so preventing the formation within its cavity of those clots by which the spasmodic action is stimulated in cases of after pains.

Method of Employing Ergot in Obstetric Cases.—The dose of ergot to be given must, of course, depend on the particular circumstances of the case, as well as the preparation selected in each instance. At the same time I may observe that in whatever form ergot may be resorted to as an ecboic in any suitable cases of delay from uterine inertia in the latter stages of labour, or for the prevention or arrest of subsequent

hæmorrhage, it should be always administered in a dose sufficiently large to secure prompt, active, and permanent uterine contraction. And, secondly, that under no circumstance should this drug be given in midwifery practice in those small, utterly inefficient and repeated doses which are now recommended by some writers, and which, in my opinion, are calculated, by producing irregular and evanescent waves of muscular contractibility, to do more harm than any possible good.

With regard to the most suitable preparation of ergot for obstetric use there have been almost as many different opinions as writers on the subject. In my early days an extemporaneous infusion of the freshly-powdered drug was most generally employed, and, though troublesome to prepare and nauseous to take, was of unquestionable ecboic activity. This in turn was replaced by the more palatable and equally effective official liquor ergotæ of the British Pharmacopœia, or by a glycerine solution such as Long's, which, twenty-five years ago, when I was Assistant-Physician to the Rotunda Hospital, was as largely and efficaciously employed as any of the later preparations of ergot. To the value of some of these, and more especially of Bonjean's ergotin, Burroughs and Wellcome's tabloids of ergotin or its citrate, and Oppenheimer's ergol, I can speak from experience of their use in many instances. At the same time, however, I must confess my possibly antiquated predilection for the freshly prepared liquid extract of the Pharmacopœia. This, in the cases mentioned, during or immediately after labour, I have generally employed in doses of from two to three drachms by the mouth, together with a drachm, or even two if necessary—at the same time—by deep hypodermic injection in the gluteal region.

In the treatment of after-pains, or to secure such firm and permanent uterine contraction after delivery as may aid in safeguarding the patient against puerperal sepsis, or subsequent sub-involution, I have generally found drachm doses of liquor ergotæ, given thrice daily in combination with tincture of nux vomica and citrate of iron and quinine, most serviceable. To act thus efficiently and safely in any of the instances that have been here referred to, it should be hardly

necessary, in conclusion, to observe that ergot or ergotin, like all other active drugs, must be judiciously employed, or, in other words, should be given only in suitable cases and conditions, at the proper time, in efficient doses, and with due precautions.

ART. VIII.—*Two Cases of Relapse in Scarlatina.*^a By E. MAC DOWEL COSGRAVE, M.D., F.R.C.P.I.; Professor of Biology, Royal College of Surgeons, Ireland; Physician to Cork-street Fever Hospital, Dublin.

DURING the course of a case of scarlatina various rashes may appear in addition to the specific one; sometimes these are "accidental," being caused by local applications or digestive troubles; sometimes they denote the presence of a second febrile process, and in this way the rashes of measles, Rötheln, chicken-pox, enteric fever, &c., may be met.

Sometimes, however, the second rash is a punctiform scarlatinal rash, and the severity of the course of the febrile disturbance, the accompanying symptoms and the resulting desquamation, show that the second rash is due to a true relapse.

A very valuable summary of the literature of the subject up to 1891 is given by George P. Boddie., M.B., in the *Edinburgh Medical Journal* for October, 1891,^b and seven additional references are given in the last Appendix to "Neale's Medical Digest."^c Six out of the seven references are to papers which appeared in the *British Medical Journal*. Although by a reference to these two summaries it is seen that a fair number of cases of relapse are on record, it must be remembered that scarlatina is an extremely common disease, and that, therefore, the percentage of cases in which relapse occurs must be extremely small.

A true relapse must, however, be distinguished not only from accidental rashes, but from true second attacks. The best definition of a relapse is Körner's:—A true relapse in

^a Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, March 12, 1897. [For the discussion on this paper, see p. 67].

^b On Relapse or Recrudescence in Scarlet Fever; Two Cases, with a Note on the Literature of the subject.

^c Up to August, 1895.

scarlet fever is quite analogous to the relapse in typhoid; the first febrile process is completely gone, usually desquamation has appeared, sometimes even terminated, when there sets in a renewed manifestation of the disease. There appears for the second time a characteristic scarlatinal exanthem, all the symptoms of the illness begin anew, sometimes worse than in the first illness; often the new exanthem completes the former.”^a

For the careful notes of the two following cases I am indebted to the kindness of Dr. Ernest A. Bourke, who at the time the cases were under treatment was Assistant-Resident Medical Officer at Cork-street Hospital.

CASE I.—P. B., a girl of nine years of age, was admitted into Cork-street Hospital under my care, on the second day of illness, on November 12th, 1896. She had a very extensive dark-coloured rash, almost purpuric in appearance; well-marked *tache scarlatinale*; the tongue was coated and the papillæ were prominent; the tonsils were inflamed, swollen, almost plum-coloured, and bore large patches of exudation; the submaxillary glands were swollen and tender; there was sleeplessness and delirium; the temperature on the evening of admission was 103°, the pulse 132. It was evidently a severe case of scarlatina anginosa.

The illness of other members of the family confirmed the diagnosis; as a sister, admitted on the same day, died, on the fifth day of illness, of scarlatina maligna, and four other brothers and sisters were admitted during the same month, all suffering from severe scarlatina.

The figures of the case need be but briefly noted; the temperature kept up to 103° until the fifth day, from that it fell until on the ninth day it was normal. On the sixteenth day of illness the patient was allowed up. There was no albuminuria; desquamation was well marked, the cuticle separating in large flakes.

On December 7th—the twenty-eighth day of illness, and twenty-sixth day after admission into hospital—when desquamation was finished on the trunk and upper extremities, but was still occurring in the legs and feet—the patient had an attack of vomiting; this was accompanied by headache, and pains in the limbs; towards evening a red rash appeared on the trunk and limbs, and the temperature rose to 103·4°, the pulse being 108.

December 8th. (Next morning).—The temperature had risen to

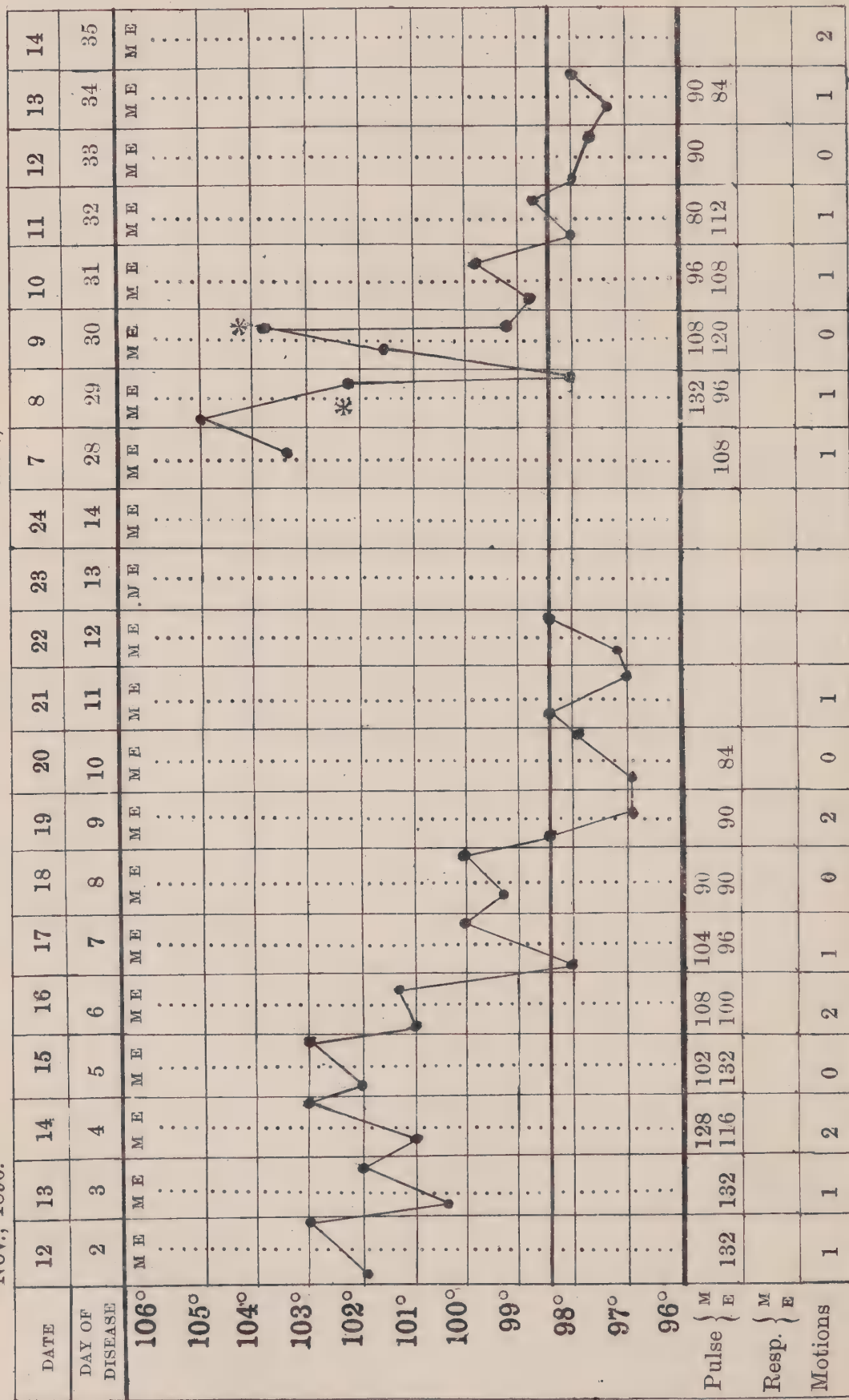
^a Quoted by Boddie, loc. cit., from Jahrbuch für Kinderheilkunde. 1873.

TEMPERATURE CHART

CASE I.—P. B., aged nine years.

Nov., 1896.

Dec.,



* Guaiacol, 5 minims.

TEMPERATURE CHART

CASE II.—J. D., aged nine years.

Nov. 1896. Dec.,

DATE	27	28	29	30	1	2	3	4	5	14	15	16	17	18	19	20	21	22	
DAY OF DISEASE	6	7	8	9	10	11	12	13	14	23	24	25	26	27	28	29	30	31	
106°	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME
105°																			
104°																			
103°																			
102°																			
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99°																			
98°																			
97°																			
96°																			
Pulse { ^M E	100	104	96	116	96	120	96	108	96	96	128	120	102	96	90	78		72	
Resp. { ^M E																			
Motions	1	0	1	2	2	0	1	0	1	1	1	2	0	1	1	1	0	2	

* Guaiacol, 7 minims, applied epidermically.

105° and the pulse to 132; the skin was hot and dry, there was a scarlet punctiform rash all over the chest, back and limbs; *tache scarlatinale* was well marked; the tongue was coated, its papillæ being prominent; the pharynx was red, the tonsils were inflamed and swollen.

December 9th.—The skin was still hot and dry; the rash on the body was still bright-coloured and punctated; the *tache scarlatinale* was especially well marked on the back; the skin around the mouth and at the sides of the nose was still free from rash; there were well-marked petechial lines at the bend of the elbows, and in the popliteal spaces; the kidneys were acting freely and the urine contained a little albumen, which persisted for two days, but there was neither blood nor tube-casts.

December 10th.—The rash was fading; the coating was clearing off the tongue and the enlarged papillæ were prominent; the tonsils were still swollen.

December 11th.—The temperature fell to normal; and four days afterwards, on the eighth day of the relapse, secondary desquamation commenced on the arms, the sides of the neck and the axillæ. A week later there was well-marked flaky desquamation on the body, on the arms and about the axillæ; and a few days later there was slight secondary desquamation of the hands.

The patient was discharged on January 6th, 1897.

CASE II.—J. D., a girl of nine years of age was on the 27th November, 1896, admitted into Cork-street Hospital under my care, on the fifth day of illness. There was a bright-coloured rash; the tongue was stripped, the papillæ prominent; the tonsils were inflamed and swollen. On the same day a younger sister was admitted, both children were suffering from mild but undoubted scarlatina.

On December 2nd, desquamation commenced, and the case went on favourably until the morning of December 15th—eighteen days after admittance, and the twenty-fourth day of illness—when the child complained of headache and sore throat. That evening the temperature rose to 105°, the pulse being 124; there was now a bright red eruption of very minute points over the trunk and arms; the forehead and cheeks were flushed, the parts round the mouth and nose retaining their normal colour; the tongue was coated and the papillæ were prominent; the tonsils were swollen and inflamed; the hard palate, the fauces and pharynx were injected.

December 16th.—The temperature both morning and evening was 102°, the rash had faded on the trunk but was well out on the

thighs and legs ; there were red petechial lines at the bend of the elbows ; the papillæ of the tongue were still more prominent.

From this on the case gradually improved, the temperature becoming normal on December 18th—the fourth day of the second attack.

The child was desquamating in parts when the second rash appeared, and after the second attack the desquamation in those parts was greatly increased. Desquamation was repeated in parts where the former desquamation had ceased. On January 12th, 1897, the fifty-first day from the first attack, and thirty-fourth from the second attack, the cuticle was separating in flakes from the feet.

In neither of these cases was there any doubt as to the initial disease, and in both cases the diagnosis of relapse was not founded upon one or a few symptoms, but the severe invasion, the rash, the characteristic tongue and fauces, the high temperature, and secondary peeling, all were present, so I think I am justified in recording them as cases of true relapse.

ART. IX.—*Gunshot Fractures and their Treatment, being Brief Notes of a Lecture delivered at St. Vincent's Hospital in the Session of 1897.* By JOHN M'ARDLE, F.R.C.S.I.

THE case which I desire to recall to your mind occupied No. 19 bed in St. Patrick's Ward. Dr. Mackay, of Stepaside, saw this lad, J. S., aged nineteen years, immediately after an accident which took place in the following way:—The lad was trailing a gun (of his own making) after him, holding it by the barrel ; something struck the trigger, and the entire of the charge entered the arm above the bend of the elbow, shattering the shaft of the humerus into fragments.

Dr. Mackay immediately put the arm in proper position, arrested hæmorrhage, and brought the patient to St. Vincent's, as he knew operative interference would be necessary. I saw the patient in consultation with Dr. Mackay at 10 30 that night ; we had him put under chloroform at once, the dressings removed, and the limb thoroughly sterilised with warm corrosive sublimate solution. The wound was now flushed

out with warm corrosive, and introducing my finger through it I ascertained that the charge had passed *en masse* between the brachial artery and the tendon of the biceps. The artery stood out very rigid and quite bare, and to me it seemed strange how it was not torn. My finger passed readily through the fragments of the humerus towards the back of the arm, where embedded in the substance of the triceps I found spread out the contents of the gun. The skin over the back of the arm was sound. I laid the back of the arm freely open by a long vertical incision, which going through the triceps muscle exposed a cavity containing a part of the patient's coat the size of a crown piece, masses of brown paper, and almost an ounce of shot, hardly a pellet of which was normal in shape.

It was strange that so many of the grains were battered into all sorts of figures, many of them being quite flattened. How so much material got through between the artery and tendon without injury to the vessel can only be explained by the complete covering of the shot by the piece of coat and the abundant wad of paper which I extracted. Free flushing of the track of the charge caused most of the debris to come through the posterior aperture which I had made; but, as will be seen from the accompanying radiograph, a few pellets remained behind. A large drainage tube was now inserted through the arm, a loose dressing applied, and the arm fixed on an angular splint.

For some time there was copious sero-purulent discharge, and the patient had much pain. Thorough irrigation with warm corrosive sublimate solution, and plugging of the wound with gauze saturated with a solution of acetate of aluminium soon reduced this, so that healing occurred with fair rapidity. During this process the parts were kept at rest by an L-shaped bracketed splint which was applied to the outer side of the arm and forearm, while a somewhat similar one supported it on the inner side, so that irrigation, dressing, &c., could be carried out without disturbance of the parts injured.

Now the difficulty I had in this case was to keep the parts in apposition; and in order not to disturb them during repair I was obliged to avoid passive or any other motion of the

elbow, and so when at last I was satisfied that union was sound, I found the elbow-joint fixed, and so firmly that I feared bony ankylosis, and not wishing to attempt vigorous extension of the arm, fearing to reproduce in part the original fracture, I took this picture, which I think very instructive, and which I found to be of great assistance, as I now had no hesitation in putting the patient under chloroform, and forcibly moving the forearm or the arm.

From this onward passive motion was carried out, and now you see the appearance of the limb, and that the movements are perfectly free.

The lesson to be learned from this case is that, contrary to most of the teaching on the subject, there is a fair prospect of preserving limbs shattered by gunshot accidents if there is no serious disturbance of the blood supply. And the points I would lay stress upon in the treatment of such cases are:—

- (a) The first dressing must be thorough, however collapsed the patient is.
- (b) That fixation of the limb must be ensured.
- (c) That before applying the dressings the circulation in the limb should be restored, either by immersion in saline solution at a temperature of 100° – 101° F., or irrigation with the same solution at 103° – 104° . It is extraordinary how this local application of heat restores not alone local vitality, but also the general circulation.
- (d) That all these early procedures be carried out under chloroform, as nothing serves to confirm the patient's depression like watching every move we make. Besides, he cannot well bear solutions at the temperature necessary for the restoration of vitality.

To Dr. Mackay's promptitude is due the favourable result in this case; and to my assistant, Dr. Kennedy, this boy owes a deep debt of gratitude for his unceasing attention during his time in hospital.

The radiograph, which I have shown you, makes clear the position of—(a), the pellets we could not extract; (b), the situation and extent of the fracture; (c), the complete freedom of the elbow-joint; (d), the amount of repair material laid down at the seat of fracture.



MR. M'ARDLE ON GUNSHOT FRACTURES.

One word, in conclusion, in reference to the value of hot water in the treatment of injuries. It cannot be too forcibly impressed on you that nothing restores the vitality of a contused part like heat; and when the heat is applied by immersing the limb in saline solution, which (1) raises the temperature, (2) prevents evaporation, and (3) is capable of absorption, one sees within a brief period signs of local and general reaction. This I have frequently demonstrated to you in cases of stasis in the intestine, and also in cases of strangulation of the omentum, where the slightest change in the vascular condition can be readily observed. Of course you cannot so quickly appreciate the local change when moist heat is applied for external injuries, such as in our case; but the change of pulse, the improvement in aspect, and the rise of general body-heat, which are soon noticeable, afford ample proof of the great value of this treatment. Believe me, the many merits of boiled neutral saline solutions are yet little understood. When their application becomes more general and methodical much suffering will be avoided, tedious delays in healing prevented, and many valuable lives preserved.

ART. X.—*Case of Occlusion of Upper Part of Vagina, a Small Sinus alone remaining.*^a By J. COOPER L. STAWELL, M.B., Medical Officer, Bagnalstown Hospital; President of the South-Eastern (of Ireland) Branch of the British Medical Association.

CASE.—E. N., aged forty-four, married; 5 para; labourer's wife; admitted December 7, 1896. Two children living; one still-born; two died in infancy; one miscarriage, nine years ago. Except for ailments of parturition, always fairly healthy. Labours always difficult, and terminated by instruments. More than once she had, after confinement, such severe attacks of what she calls "fever and inflammation" as to endanger her life. A few months after the miscarriage she got violent pain, low down, almost in the perinæum, and was treated for it at a county hospital. Getting better she returned home, and three months later she had another attack, from which she recovered without treatment. She had this

^a Read before the South-Eastern (of Ireland) Branch of the British Medical Association.

pain now when menstruating, and was free from it in the interval. She continued in this state until four years ago, when she had a free shedding, after the period had apparently stopped, and this occurred at each period, lasting four or five days, and giving great relief to pain. A fortnight before admission she got very bad pain and had to lie up, and a week later the pain was so violent she thought she was dying. This attack occurred after the period had apparently ceased, and lasted until the shedding again came on, when all pain, as usual, ceased.

On Admission.—Temperature, 98°; pulse, 72; tongue rather dry; sordes on teeth; seems in a good deal of pain, and is exquisitely tender over abdomen. Urine very acid, 1030; no albumen or sugar; micturition rather painful. Heart and other organs healthy. The urgency of her symptoms did not subside sufficiently to admit of vaginal examination until December 19, when I found the vagina was turned into a kind of a pouch, admitting the forefinger as far as the second joint. The os could not be felt, and no opening could be found in a sort of velum interpositum which existed between the vagina and uterus. It seemed as if the uterus was pressing against this septum, and the fundus could be felt per rectum. Little points like puncta cruenta could be seen on the membrane, and it seemed as if blood oozed through them, but through none of them could communication be established with the uterus within. The parts were so tender and the patient so very nervous that it was evident no thorough examination could be made without an anæsthetic, so the vagina was thoroughly douched, and menstruation coming on soon after was normal and painless.

Some little time after this period was over she was put under ether in the presence of Dr. F. W. Kidd, Master of the Coombe Hospital, who most kindly came specially from Dublin to see the case, and of Messrs. Norton and W. H. O'Meara, who also kindly gave me their advice and assistance. Most careful examination per vaginam and rectum failed for a long time to detect any opening in the septum; but at length a very tiny orifice was detected in the left superior angle of the vagina. The point of a Playfair's probe was passed through this with a little difficulty, and made to bulge through the membrane which was divided on it. It was found that the probe could pass downwards and backwards to a depth of about two inches, and its point could then be felt through the rectum resting on a solid mass, evidently cicatricial tissue, and probably involving the cervix. The passage through which the probe passed was gradually dilated until the forefinger could pass through, and it was then plugged with iodoform gauze. There

was a good deal of constitutional disturbance for the first day or two of the next period; but, save for that, the woman has been perfectly free from all her old trouble since the operation. The opening has been occasionally dilated with the finger; and up to now (July) menstruation has been normal and painless.

Remarks.—Such complete occlusion of the vagina as in this case must be very rare, and I can find no mention of it in any of the text-books at my command. The cause of the lesion was probably sepsis recurring with each of the attacks, which the patient described as “fever and inflammation,” and the freedom from pain at the period succeeding my primary examination was of course due to the incidental stretching of the already existing outlet. Dr. More Madden describes a very similar case (Transactions of the Royal Academy of Medicine in Ireland. 1883. Vol. I., p. 37), in which there was such occlusion as to cause complete retention of the menses. I desire gratefully to acknowledge my indebtedness to Dr. F. W. Kidd for his kindness in coming specially to see the case, and for his invaluable help and advice.

ART. XI.—*Angina Pectoris*.^a By JOHN KNOTT, M.A., M.D., Ch.B., and Dip. Stat. Med. (Univ. Dubl.); M.R.C.P.I.; M.R.I.A.; Fellow of the Royal Academy of Medicine in Ireland; &c.

(Continued from page 38.)

THE accounts contained in the extracts which I have already given include the best descriptions that, so far as I know, have hitherto been published of the curious, interesting, and comparatively uncommon group of symptoms which are usually connoted by the term *angina pectoris*. I will now proceed to compare and contrast the prominent features of my own case with those of the principal examples furnished, and in the light of the statistics collected by the other prominent authorities who have dealt with the same subject.

With regard to the radiations from the central focus of

^a Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, Friday, April 9, 1897.

pain, Huchard tabulates the reflexions as follows:—"Irradiation occurs (1) preferably to the upper extremities, and especially to the left arm; (2) to the cervical plexus with pains in the neck, face, tongue (Trousseau), chin, and ear (Butler, Wichmann), to the temporo-maxillary articulation where it may produce a kind of trismus; to the external cardiac branches of the pneumogastric, to the throat, larynx, stomach and liver, producing aphonia, a kind of globus-hystericus, a sensation of heat in the epigastrium, nausea, eructation, vomiting, gaseous distention, pains in the hypochondrium simulating hepatic colic; (4) to the intercostal and diaphragmatic nerves, with pains in the thorax, vertebræ, breast, and hyperæsthesia in the mammary region, as observed by Laennec; (5) to the hypogastric region (Blackwell), to the testicle with swelling (Hoffmann, Laennec, Gintrac), ilio-scrotal neuralgia (Axenfeld), strangury (de Lorme), dysuria (Blackwell, Lartigue); and (6) to the lower extremities (Friedreich)."—(Quoted by Whittaker).

The prognosis of *sudden death* which appears to have been so prominently before the minds of the older physicians was not verified in this case. On this point Dr. Heberden, in his later description of the condition, given in the "Commentaries," observes: "The termination of the angina pectoris is remarkable. For if no accident intervenes, but the disease go on to its height, the patients all suddenly fall down, and perish almost immediately. Of which, indeed, their frequent faintnesses, and sensations as if all the powers of life were failing, afford no obscure intimation." And Dr. Wall, who was inspired by Dr. Heberden's original communication to the College of Physicians of London to write to him on the subject, states: "I have seen 12 or 13 persons afflicted in this manner, of which number one, who applied early in the disease, was relieved considerably by the use of antimonial medicines joined with the fœtid gums. He is still living; and goes about with tolerable ease. Two were carried off by other disorders; all the rest died suddenly." In this connection Professor Gairdner—quoted by Dr. J. W. Moore, in a paper on this subject which appeared in Vol. LXXXIX. of this Journal—observes:—"The fact of sudden death, superadded to the evidence of certain sensations

preceding death, may be considered to afford the nearest approach we have to an accurate definition of this disease."

With regard to the question of the *sex* of the subjects of angina pectoris, universal experience bears testimony to the vastly greater degree of frequency of its occurrence among males; so that my patient formed a unit of the small minority. Heberden, in his "Commentaries," observes: "I have seen nearly one hundred people under this disorder, of which number there have been three women." Of 88 cases collated and commented upon by Sir John Forbes, but 8 occurred in females; and the experience of other authorities bears very similar testimony. Lartigue tabulated 67 cases, and of those there were but 7 women. Huchard, in his very exhaustive discussion of this question, has collected statistics of 237 cases of true angina, and of them only 42 were females. In Professor Osler's series of 40 cases of true angina, there was but one woman.

In connection with the question of the *age* at which angina most frequently appears, M. Lartigue has tabulated 65 cases. Of this number 1 occurred at 17 years; 1 at 21; 1 at 25; 1 at 29; 6 between 30 and 35; 2 at 40; 11 between 41 and 51; 25 between 51 and 60; 13 between 60 and 70; and 4 between 71 and 77. My patient surpassed the "record" limit of this statistical table. Even by her own account she was 78; and some of her lady friends more than once insinuated to me that she had, to their own personal knowledge, remained at that age for a considerable number of years before. Professor Osler's paragraph on this subject is so admirably clear and succinct that I will quote it in full: "The age at which it is most common is that of artero-sclerosis—after the fiftieth year of life. Of the forty cases on my list there were only four under the fortieth year. One of these, a man, aged thirty years, had had syphilis five years before; the other case, a woman, aged thirty-two years, had mitral valve disease; the third case had terrible attacks of angina following chronic pleurisy. In the fifth decade there were thirteen; in the sixth, thirteen; in the seventh, nine; and of one case I did not get the exact age. The average of the thirty-nine cases was about fifty-three years. Cases are reported in quite young individuals, even in children, but such are almost invariably the subject of

chronic valvular diseases or adherent pericardium." The age of 52 has, indeed, been so frequently observed to be a favourite period for the onset of true angina, that some have suggested that it might deservedly be designated the *anginal climacteric*. Of the 88 cases collected by Forbes, 72 had passed the age of 50 before the first attack.

With regard to the *nationality* of angina pectoris, my patient was on the side of the majority. As I have already observed, the preference of this symptom-group to select its victims from the inhabitants of England has been noticed by the various authorities on the subject, almost from the time of Heberden's original description. My hearers will recall the remarks made on this subject by Dr. MacBride.

It has been said of angina pectoris as Sydenham said of gout—that it more frequently victimises "the *rich* than the poor and the *wise* than the foolish." In regard to both these qualifications, my patient was also among the majority. She was well-born, well-connected on both sides of the house, and had always lived in affluence.

With regard to *mental energy*, she was also enrolled with the greater number of the victims of angina pectoris. Her intellectual activity has been already referred to. As I have remarked in the preceding paragraph, angina possesses this feature in common with gout—of manifesting a decided preference for the higher types of cerebral function. It has often displayed the best discriminating powers in the selection of its sufferers: these have included some of the best specimens of artistic and scientific culture. Medicine and natural history are well represented by John Hunter and Charles Darwin, theology by Dr. Chalmers, general literature by Matthew Arnold, sculpture by Thorwaldsen, and "her rainbow sister" by our countryman, John Leech.

Obesity has often been noticed to be a frequent concomitant of the symptoms of angina pectoris. Even John Hunter, whose restless activity of both mind and body has hardly ever been surpassed in the history of the human race, waxed fat after he had become a victim of angina. This was attributed by his biographer—and, I have no doubt, justly—to deficiency of accustomed exercise. Many other observers have pointed out the greater frequency of the

occurrence of angina in stout persons. My patient formed a complete contrast to the typical subject of angina. She was tall, thin, and bony, and had always been so. The short neck and broad shoulders which have so often been noticed in connection with angina—as they have with the other conditions of gout and apoplexy, which are also so intimately associated with atheroma—were, of course, conspicuously absent.

The *temper* of the sufferer has often been observed to form a most important feature in connection with the origin of angina, and the progress and repetition of its symptoms. John Hunter's classic case, where he "felt his life to be in the power of any rascal who choosed to annoy or tease him," is well known to every one of my hearers who is interested in the personal history of the intellectual giants of our profession. The temper of my patient corresponded fairly well with that of the great pathologist. It has been said of a frequently associated condition, "a fit of the gout is often a fit of bad temper;" and, with corresponding limitations, the same may also be said, I think, of angina pectoris.

One more clinical feature of this case is, I think, worthy of remark. Trousseau's conception of angina as an *epileptiform neuralgia*, or *cardiac epilepsy*, is well known. The manner, already alluded to, in which the aura-like pain often commenced at the periphery and shot up to the shoulder, and inwards to the mid-sternal and precordial regions, was curiously suggestive of the view of the great physician of the Hôtel Dieu.

I have already expressed the opinion that all writers on the subject appear to have failed to offer anything like a satisfactory explanation of the radiations of the paroxysmal pain which characterise angina pectoris. If I may venture to rush in where so many wiser and more experienced observers have judiciously feared to tread, I would point out to my hearers what has appeared to me to be a considerable similarity between the paroxysms of angina and the painful *cramps* of alcoholic neuritis. Having regard to the different systems of nerves affected, I venture to suggest that the analogy will hold good. Adopting, as I do, the idea based upon the theory of Romberg, and the *post-mortem* demonstra-

tions of Lancereaux and Peter, that the symptoms are primarily due to the affection of the nerves of the cardiac plexus, the variable amount of radiation of pain may simply be due to the varying extent to which this neuritis has extended to other filaments of the vaso-motor nerves. May not this vaso-motor neuritis be more intimately associated with the distribution of atheroma than pathology has yet pointed out?

With regard to the *treatment* of angina pectoris, little explanation is required of the action of the anodyne and antispasmodic medicines that are usually employed. Cases of *cure* have been recorded under the use of powdered valerian root (Wichmann, Jurine), of asafoetida, of camphor, of extract of hemlock (Johnston), of sulphate of zinc (Perkins), of flowers of sulphur (Munk), of Fowler's arsenical solution (Alexander, Cahen). Bretonneau persuaded himself that he had cured a number of cases by the copious administration of sodium bicarbonate, sometimes associated with belladonna. I am doubtful, more than doubtful, of the reality of a genuine cure of a case of true angina by such remedies.

The effects of the use of *wine* were unsatisfactory in my case. They were precisely what might have been anticipated in presence of chronic neuritis, and very similar to those described by Sir Everard Home in the case of John Hunter. "As he had not drank wine for four or five years, he was advised to try it, which he complied with; but found the spasms more easily brought on after using it than on those days on which he drank none; and they were always more readily produced after eating a hearty meal."

The application of *amyl nitrite* to the relief of the paroxysms of angina pectoris is a boon which has been conferred upon suffering humanity by Dr. Lauder Brunton; and if that great physiologist and therapist had done nothing else original in the whole of his professional career, I conceive that this achievement alone had thoroughly earned for him the high reputation which he so deservedly enjoys as a scientific benefactor of the human race.

The theory of the action of amyl nitrite on the circulation, which appears to be generally received, is that it is due to the liberation of nitrous acid:—



The nitrous acid thus set free rapidly undergoes full oxidation:—



The oxide of nitrogen so formed instantaneously exerts its well-known affinity for oxygen:—



And the peroxide so produced at once unites with water to form more nitric acid:—

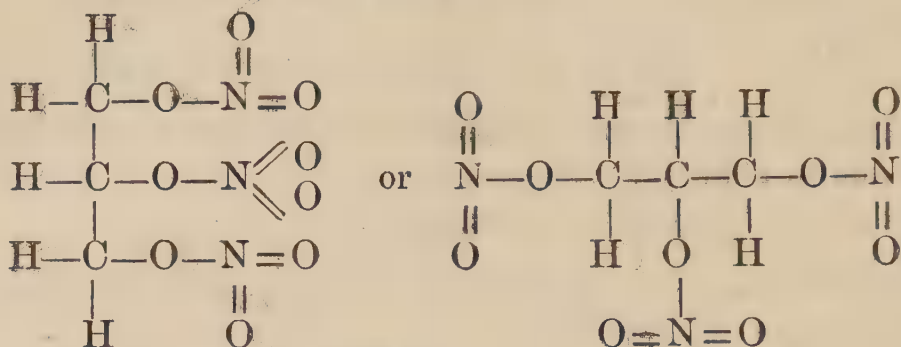


Several other nitrites have, we are told, actions very similar to that of amyl. *Nitro-glycerine* (tri-nitrin, glonoïn) is the nitro-compound which, after amyl nitrite, has achieved the highest reputation in this connection. Its action is said to be similar to that of the latter remedy, but manifesting itself more slowly, and lasting a longer time. Some authorities appear to have been greatly impressed by its effects; Trusséwitsch conferred upon it the appellation of *angioneuroisine*, and recommended its use in spastic migraine and other forms of neuralgia, in sea-sickness, and other conditions where the symptoms of cerebral anæmia happen to form a prominent feature.

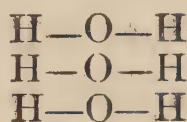
The intimate structure of the nitro-glycerine molecule indicates the likelihood of rapid chemical transformation, which is borne out by examination of its explosive properties. I will turn aside for a moment to consider its constitution, although I have been disappointed in its therapeutic action.

“Nitro-glycerine has been analyzed, and, unless the principles of our modern chemistry are all wrong, its molecules have the composition indicated by the symbol $\text{C}_3\text{H}_5\text{N}_3\text{O}_9$. Note that there are already in the molecule nine atoms of oxygen, more than enough to satisfy all the atoms, both of carbon and of hydrogen. When carbon burns, C_3 takes only O_6 , H_5 only $\text{O}_2\frac{1}{2}$, and why is not the affinity of these atoms for oxygen satisfied already? The only answer that can be suggested is, because the oxygen-atoms, although parts of the same molecule, are not in combination with the carbon or hydrogen atoms in those molecules; and what is this but

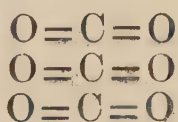
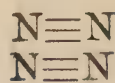
an admission that the molecules have a definite structure by which these atoms are kept apart?



Nitro-glycerine.



Water.

Carbonic
Dioxide.Nitrogen
Gas.

“ . . . Now, when the substance explodes, what takes place is simply this: The oxygen atoms at one end of the molecule rush for the carbon and hydrogen at the other end, and the molecule is broken up, as our next diagram indicates; only, as there are not enough atoms to form even molecules, we must consider that one atom of hydrogen and one of nitrogen are borrowed from the fragments of a neighbouring molecule, broken up at the same time. You see, therefore, that the chemical action is very nearly the same as in the burning of gunpowder, the difference being that while in the powder the carbon and oxygen atoms belong to different molecules, in nitro-glycerine they belong to the same molecule. In both cases the carbon burns, but in the nitro-glycerine the combustion is within the molecule. This difference, however, which the theory indicates, is one of great importance, and shows itself in the effects of the explosion.

“In gunpowder the grains of charcoal and nitre, although very small, have a sensible magnitude, and consist each of many thousand if not of many million molecules. The chemical union of the oxygen of the nitre with the carbon-atoms of the charcoal can take place only on the surface of charcoal-grains; the first layer of molecules must be consumed before the second can be reached, and so on. Hence the

process, although very rapid, must take a sensible time. In the nitro-glycerine, on the other hand, the two sets of atoms, so far from being in different grains, are in one and the same molecule, and the internal combustion is essentially instantaneous."—(Cooke).

This lucid explanation of the structure and subsequent demolition of the nitro-glycerine molecule would lead one to anticipate striking results from its internal administration. When we consider that the said molecule *cannot* exceed the size of a cube each of whose sides measures $\frac{1}{25000000}$ of an inch, our admiration must be increased for the wondrous architecture of Nature, and also for the discoveries of modern science. I will only say that I have been disappointed with nitro-glycerine,—therapeutically.

Chloroform and other general anæsthetics I did not think it desirable to try, on account of the age and restiveness of my patient.

The other remedies which I used require, I think, no special discussion; and I will conclude this too lengthy communication by apologising to my hearers for the length of time which I have detained them in the consideration of a subject on which so little can be said with the confidence of scientific accuracy.

RACIAL MORTALITY OF PLAGUE.

DR. LOWSON publishes in the *Indian Medical Gazette* a valuable paper on the plague of 1894 in Hong-Kong. He states that amongst the Chinese, "as far as official figures go," the mortality illness. Amongst Indians it was 77; Japanese, 60; Eurasians, was 93·4 per cent., this high rate being due to the want of efficient medical attention and nursing in the early days of their illness; Europeans, 18·2.

SPITS.

THE first fine for spitting in the cars was imposed on Tuesday last upon a man in this city (New York), who violated the health ordinance. The amount of fine was \$5. The man pleaded ignorance of the law, but without avail. A few such lessons to passengers in the elevated and other cars, particularly of the east side, would prove to be wholesome reminders of ordinary decency.—*Med. Rec.*

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Manual of Bacteriology. By ROBERT MUIR, M.A., M.D., F.R.C.P. Ed.; and JAMES RITCHIE, M.A., M.D., B.Sc. With one hundred and eight illustrations. Edinburgh and London: Young J. Pentland. 1897. [Pentland's Students' Manuals].

DESPITE the plethora of text-books on bacteriology the present work will, we venture to predict, meet with ready and widespread acceptance. The joint authors have acquitted themselves of their task in thorough workmanlike style, and have succeeded in presenting their readers with a concise, well-written, and fairly complete account of the state of bacteriological knowledge at the date of publication—viz., June, 1897.

There is nothing strikingly original in the classification and arrangement of the facts. The authors begin with a chapter on the General Morphology and Physiology of the Bacterial Cell, in the course of which Hueppe's name is mentioned in connection with the subject of arthro-spore-formation. No mention is made of Dr. Bary, who was the first to draw attention to these bodies, the real nature of which has since become more than doubtful. A more complete discussion of antiseptics and their mode of action would have been desirable in a work intended for students of medicine. No mention is made of the great powers of disinfection possessed by the vapours of formic aldehyde—a fact which is all the more remarkable when one reflects that the authors must almost of necessity have had this reagent in daily laboratory use, especially for permanently fixing characteristic cultures of micro-organisms. The second chapter describes the methods of cultivating bacteria, and is admirably compiled. The technique of the preparation and sterilisation of the various substrata in common use, and the various methods of analysing bacterial mixtures, are con-

cisely and systematically set forth, and the illustrations, especially those referring to anaerobic culture-methods and plans of procuring germ-free filtrates, will be of real assistance to those undertaking such work for the first time. The requirement, on p. 72, that water should be allowed to flow for several *hours* from house-taps before sampling for bacteriological analysis, seems somewhat exaggerated. Several *minutes* would meet the case much better, in view of the fact that when water is drawn for domestic purposes it is not usually allowed to run longer than the last-named period. Our own experience leads us to thoroughly endorse the authors' preference for Hearson's incubator to the more cumbrous articles "made in Germany," which often leak, and the inner space of which is generally very deficient in amount.

The chapter which comes next, on microscopic methods, leaves but little room for criticism. Suffice it to point out that there is no mention of Leitz's lenses, although their cheapness and excellence have given them a place on the table of many a worker whose resources were not adequate to the purchase of Zeiss's more expensive products. Due importance is given to the preparation of films by the corrosive method, and it is with pleasure that we note the inclusion of Gulland's excellent plan of film-fixation in alcoholic sublimate + ether—a method which when properly worked yields results unsurpassed for richness and variety of cytological detail. From the list of fixative reagents "formaline" (formic aldehyde) is omitted—a serious error, as formaline followed by freezing is the most rapid method hitherto desired of obtaining really good sections of a pathological tissue, the necessity for tedious washing out of the fixative, and consequent loss of time—and proteid—being altogether done away with.

Stains are not enumerated in puzzling multitude—a mistake into which writers on bacteriology are very apt to fall; and all the methods given are of approved value—carbol-thiomin-blue being perhaps the only colouring matter which is not on the table of every laboratory worker.

The weakest chapter in the whole book is the fourth, in which Drs. Muir and Ritchie discuss non-pathogenic micro-

organisms and fungi. We do not remember having ever met with so striking an example of the want of general biological training on the part of bacteriological experts as that afforded by the following statements on p. 120 :—"Non-sexual reproduction also takes place by the formation within certain special cells in the filament of a definite number of spores *to which the special name of asci is applied.*" [The italics are ours]. Lest any doubt might remain as to whether the printer was not responsible for so grave a blunder, we find it repeated lower down in another form, *à propos* of aspergillus :—"This twisted part ultimately divides into a limited number (not more than eight) of oval bodies—the *asci or spores.*" [The italics are, again, ours.]

We cannot but regret with Professor Hueppe that the closeness of the relationship between bacteriology and medicine has disjoined the study of the schizo-mycetes from that of the neighbouring groups of fungi and algæ, and caused it to become an appanage of the medical rather than of the botanical scientist. And thus it has come to pass that the two accomplished bacteriologists whose work we are now discussing actually confound *asci* with *ascospores*—the containing with the contained! Let us hope that so elementary a blunder may disappear from the second edition of this book.

Drs. Muir and Ritchie do not, however, commit themselves to more than a mere allusion to forms, such as the *Trichophyta*, the discussion of which would make serious demands upon their knowledge of general mycology, but pass on to more familiar regions—toxin production and its relations to bacterial pathogenicity. And here we may remark that their statement that the first to systematically study the production of poisonous bodies by bacteria was Brieger involves an injustice to the names of Selmi and Panum, whilst to speak of leucomains without mentioning Gautier is surely omitting to give honour where honour is fairly due. Apart from these, which, after all, are mere matters of history, the treatment of the subject leaves very little to be desired, the language being as clear and the lines of thought as direct as the somewhat complex subject-matter will allow.

It is not our intention to follow the authors through the long series of chapters in which they take up, one by one, the

individual pathogenic bacteria and describe their characters and interaction with the human organism. Their information is full, accurate, and well brought up to date—if we except their obvious disinclination to accept or discuss the morphological characters which have induced recent authors—especially Lehmann and Neumann (*Bakt. Diagnostik*, Bd. II., pp. 350, 363, &c.)—to remove the organisms associated with diphtheria, tubercle, and leprosy from the genus *Bacillus* and place them in a position intermediate between the genuine unbranched *Bacilli*, like *anthrax*, and the lower hyphal forms like *streptothrix*. The photograms which accompany the descriptions are evidently selected with care, but many of them lack distinctness—*e.g.*, Figs. 40 and 46. The account of the typhoid bacillus may be selected as admirable for completeness, and yet not overloaded with detail. Drs. Muir and Ritchie are decided *dualists* as to the relation between *Eberth's Bacillus* and *B. coli*. They give full prominence to Sanarelli's important researches on the intensification of the virulence of the latter microbe in cases of typhoid, but omit all mention of the research of Remlinger and Schneider (*Ann. Past.*, T. XI., 1897, p. 55), and, in direct contradiction to the results obtained by these observers, state that “a bacillus giving all the reactions of the typhoid bacillus has never been isolated except from cases of typhoid fever, or under circumstances that make it possible for the bacillus in question to have been derived from a case of typhoid fever.”

Apropos of Sanarelli, it is greatly to be regretted that the recent brilliant research of this writer appeared (*Brit. Med. Jour.*, July 3rd, 1897) too late for inclusion in the present text-book, where the *Bacillus icteroidis* would have fittingly taken its place in the next chapter to that which describes how the dreaded Oriental pestilence has at length yielded up its secrets to modern methods of inquiry as wielded by Kitasato and Yersin.

Towards the end of the book there is a well-written chapter on vaccination and small-pox, where we notice that the authors are of opinion that cow-pox is only small-pox modified by passage through the cow, and that they are inclined to look with favour on the claims of the minute bacillus of

Klein and Copeman to be regarded as the cause of the disease, whilst they reject the "protozoa," first put forward by L. Pfeiffer, then taken up by Ruffer and Plummer, and by Guarnieri, and finally demolished by Salmon (*Ann. Past.*, T. XI., 1897, p. 289).

The last chapter—on immunity—is one of the best in the whole book, and to the practical physician who writes to understand the scientific basis of sero-therapeutics and the standardisation of the antitoxic power of animal fluids we can heartily recommend Drs. Muir and Ritchie as competent and well-informed guides. English literature contains, so far as we are aware, no such lucid and masterly exposition of a most difficult subject. The publisher, Mr. Pentland, is to be congratulated on this, the latest, accession to his series of "Students' Manuals." The paper and typography leave nothing to be desired, and misprints are only conspicuous by their absence.

A System of Medicine by many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M.A., M.D., F.R.C.P., &c.; Regius Professor of Physic in the University of Cambridge. Volume II. London: Macmillan & Co., Ltd. 1897. Pp. 1176.

DR. ALLBUTT is heartily to be congratulated on the success which so far has attended his "System of Medicine." In such works it is very difficult to keep all the articles to the same high degree of excellence, especially when there are so many writers taking part. What has struck us almost with greatest force in connection with the volume before us is the uniform excellence of the articles in it, and we are compelled warmly to admire the skill with which the editor has chosen his assistants.

We cannot in the limits of this review allude to all the chapters in the work, but will only touch on those which seem to us of most importance; in many cases, however, the chapters we have not mentioned are just as excellent as those we have alluded to.

The first section contains three infective diseases of chronic course. Dr. Sidney Martin writes a most admirable chapter

on Tuberculosis. We have read it with much pleasure. We think, however, that in writing of the symptoms of generalised tuberculosis Dr. Martin should have mentioned frequency of respiration—*i.e.*, breathing, rapid out of all proportion to any local physical signs that may be present. We think also that he should have mentioned non-tubercular catarrhal pneumonia as one of the conditions from which general tuberculosis must be distinguished. We have known even the best physicians make mistakes between these diseases.

Dr. P. Abraham writes an interesting article on Leprosy. He believes that in some cases leprosy has been transmitted from one person to another, but holds that if it be “contagious,” in the ordinary sense of the term, it must be so in a comparatively very slight degree, far less so indeed than tuberculosis. He considers that the paths have not yet been traced by which leprosy gains access to the body.

Dr. T. D. Acland writes on Actinomycosis and Madura Foot. His bibliographical references are particularly complete.

The next section relates to Infective Diseases of Unknown Bacteriology. There is an admirable article on Scarlatina by Dr. F. F. Caiger. He divides cases of this disease into—(1) *Simple*; (2) *Septic*, characterised by throat ulceration and consequent septic absorption; and (3) *Toxic*, which includes the so-called malignant scarlatina. Dr. MacCombie has a careful chapter on Small-pox; and Dr. Eustace Smith writes of Mumps and Whooping-cough. In the last-named disease his favourite drug is butyl-chloral in the early, and quinine or grindelia in the later stages. Mr. Jonathan Hutchinson writes on Syphilis. He expresses again his well-known views as to the curability of this disease: “A great amount of human happiness,” he says, “is frustrated by the exaggerated fears which are entertained by the profession and the public. . . . If two years have passed since the primary disease in the man, the amount of risk which is run (by marriage) is probably infinitesimally small.” He holds that mercury (grey powder preferably) commenced at once after the initial chancre has shown itself, and continued for a year, usually checks all further manifestations of the disease, thus completely aborting it.

Sir Joseph Fayrer writes a valuable chapter on the Climate and Diseases of India. He holds that the malarial poison may produce in some cases in the human subject phenomena indistinguishable from those produced by enteric fever. Even typical "typhoid" ulceration of the intestines may be the result of malaria. He, therefore, forms two divisions of fever with enteric symptoms—(1) The specific enteric fever or typhoid, and (2) Malarial or tropical enteric. Ulceration of Peyer's patches may be due to many causes.

Dr. J. W. Moore describes Typhus Fever. He writes from an extensive experience of the disease, such as few physicians now-a-days can boast of, and gives a clear though concise account of all important points connected with this fever. With regard to diagnosis, he mentions a number of diseases, giving the points of contrast. The rash is, of course, one of the most important points in this respect. We have, however, known it simulated by numerous flea bites occurring in a dirty, dark-skinned individual, who had some feverish attack, the result so closely resembling typhus as to cause much difference of opinion for a time. Dr. Moore's article is worthy of an ex-physician of Cork-street Fever Hospital.

A feature of this book is its cosmopolitan character; it seems written not for any one country but for the world. We have here chapters on a number of tropical diseases—Dengue, Béri-béri, Malta Fever, Epidemic Dropsy, Sleeping Sickness, Oriental Sore, &c., each of which is in itself a complete monograph on the subject, and is written just as carefully and just as fully as are the chapters on our own familiar diseases. These tropical diseases have been entrusted to such well-known authorities as Dr. Patrick Manson, Dr. Lane Notter, Surgeon-Major Firth, and others.

There is a most interesting paper on Anthrax by Dr. J. H. Bell. The various forms—cutaneous, intestinal, and pulmonary—are described more fully than we remember to have met with elsewhere.

That important subject Vaccinia has been distributed between three writers. Vaccinia in Man—a Clinical Study—comes from the pen of Dr. T. D. Acland. The normal and abnormal courses of vaccination are described, with illustrations, and the complications and accidents are discussed

at length. Dr. S. Monckton Copeman writes on the Pathology of Vaccinia, and Mr. Ernest Hart treats the subject as a branch of Preventive Medicine. By a number of statistical tables he shows the enormous fall in the mortality from small-pox in the last hundred years, the numbers falling from over 5,000 to under 80 per million per annum. The Gloucester and other recent epidemics and their lessons are discussed.

Dr. G. Sims Woodhead, who writes on Hydrophobia, gives a complete and careful account of the Pasteur treatment, as well as of the serum treatment of Tizzoni and others. Dr. Osler gives an account of malaria—good though, considering the importance of the disease, briefer than most of the articles in this system. However, Hæmoglobinuric Fever, which seems to be intimately connected with malaria, is exhaustively treated by Dr. Monckton Copeman.

The next section is on Intoxications. The chapter on Poisoning by Food—Ptomain Poisoning—is to our mind the most disappointing in the volume. No reference is made to these cases in which fresh food becomes poisonous under certain circumstances, *e.g.*, mussels and several kinds of fish. On the other hand Dr. Allbutt's chapter on the Varieties of Grain Poisoning—Ergotism, Pellagra, and Lathyrism—is excellent. The account of the epidemics of ergotism of the middle ages gives us an idea of the appalling ravages produced by this poison. Dr. C. J. Martin, of Melbourne, gives an interesting and valuable account of Snake Poison, and Dr. Calmette, of Lille, writes on his Anti-venomous Serum. The editor, Dr. Allbutt, writes an admirable chapter on Opium, Tobacco, Tea, and Cocain as poisons. We think in describing acute opium poisoning he might have assigned a greater infrequency to the respiration; he says, the respiration may become as slow as 10 per minute. In the last three cases that we have seen the respiration, whenever artificial respiration was stopped for a while, fell to four or less in the minute, and in one of the three that recovered it was hours before the unassisted respiration occurred at all as often as 10 times in the minute.

The last section—on Internal Parasites—is chiefly characterised by a truly admirable monograph on worms by Dr.

Patrick Manson. It occupies 85 pages, is excellently illustrated, and is without exception the best article we know on the subject in any work on medicine.

We regret that typical temperature charts have not been introduced much more frequently; they are useful, and give a much better idea of the course of the temperature in any disease than any mere description in words could do. We also much regret that the volume has not been more freely illustrated. The only chapters provided with woodcuts are those on Vaccinia and Worms. What an advantage it would have been had the chapters on such diseases as Leprosy, Oriental Sore, Anthrax, &c., been provided with reliable illustrations.

We have only, in conclusion, to congratulate Dr. Allbutt on the work he is editing—a work which embodies British Medical Science in a way that no other work does at the present day.

A Treatise on the Medical and Surgical Diseases of Infancy and Childhood. By J. LEWIS SMITH, M.D.; Clinical Professor of Diseases of Children, Bellevue Hospital Medical College; Physician to Charity Hospital; Physician to the New York Foundling Hospital, &c. Eighth Edition. Thoroughly revised and greatly enlarged. With 273 illustrations, and four plates. London: H. K. Lewis. 1897. Pp. 987.

SOME six years ago we had the opportunity of expressing in these columns the very high opinion we had formed of the merits of the Seventh Edition of this work; now the Eighth comes before us, and of it we may say that it is almost a new work, so many alterations and improvements have been made. Three entirely new sections have been introduced. One of these treats of morbid conditions of the blood—the anæmias, purpura, scurvy, &c.; the other two are surgical in nature, and are mainly the work of Professor Stephen Smith. In one the nature and treatment of deformities are discussed: the operations for curing hare-lip, cleft palate, extroversion of the bladder, &c., are fully described with many diagrams; deformities of the limbs are also included. The other surgi-

cal chapter treats of diseases of the bones and joints as met with in children. This section contains about 55 pages; hence the subject is treated with considerable brevity. As the work is now entitled "*A Treatise on the Medical and Surgical Diseases of Children*," it seems somewhat unreasonable to devote, for example, 52 pages to diphtheria, 15 to tetanus neonatorum, and only 9 to hip-joint disease. We are glad to see surgical diseases included in this volume, and the excellent description of them makes us wish it was longer. We hope that in the next edition the surgical parts of the work will be allotted the space they deserve.

In two respects this edition does not come up to our expectations. Although the work is dated 1897, the latest references quoted as to the use of antitoxin in diphtheria are dated as far back as May, 1895. The article was, in fact, written before any certain information had been obtained as to the value of this mode of treatment. There are two plates containing micro-photographs of Loeffler's and other bacteria. They are far from clear, and give one the idea that the camera must have been out of focus. We very much prefer a good woodcut to a bad photograph.

These, however, are but small blemishes, and we can warmly recommend this as much the best edition of a good and useful book.

Some Aspects of Infantile Syphilis. By J. A. COUTTS, M.B. (Cantab.); M.R.C.S. Being the Hunterian Lectures delivered at the Royal College of Surgeons (London) in 1896. London: Rivington, Percival & Co. 1897. 8vo. Pp. 130.

WE have read with much interest these lectures, three in number, which are now published in a small volume under the title of "*Some Aspects of Infantile Syphilis.*"

The subject is one of such large proportions that it would be impossible to do more than touch upon some of its most important aspects in any limited course of lectures.

In his first lecture Dr. Coutts discusses the much-vexed question as to at what period after primary infection it is safe to sanction the marriage of a man who has developed

complete syphilis. He quotes the opinions of many authors who have drawn conclusions from their experiences on this point varying from one year to five, and expresses himself personally as in favour of the longer period. Our field of observation has perhaps not been as large as that of Dr. Coutts or many of the authorities he has cited, but it has been sufficiently large to enable us to assert with confidence that it is impossible to find any definite period of time after the primary infection which will be applicable generally, at which a man who has suffered from complete syphilis may marry without running a risk of contaminating his partner or of begetting syphilitic children. Those who seek to do so lose sight of three points in connection with acquired syphilis which tend to vary the length of time during which it is transmittable—first the severity of the attack, then the capacity of the individual to resist and throw off the virus, and thirdly the promptitude and efficiency with which it has been treated. In addition to these factors of uncertainty the conspicuous power which the syphilitic virus has of lying latent in the system for long periods and unexpectedly coming into evidence again renders it futile to attempt to determine any period dating from its inception at which its activity will have ceased. The nearest approach to a general safe rule upon this question is to be found by taking a period of not less than twelve months immunity from any manifestation without treatment, and this only in cases which have been previously subjected to a systematic course of treatment.

The second lecture treats of symptoms and diagnosis of inherited syphilis in infants, and is full of practical information derived from a large number of cases treated in the East London Hospital for Children.

The concluding lecture treats of the lesions of the osseous system in inherited syphilis, and is perhaps the most valuable of the series, if these lectures are to be a guide to junior members of the profession and general practitioners, in making a diagnosis between syphilitic and other diseases in infancy, more especially in distinguishing between syphilitic affections of the bones and rickets in young children, these conditions not only having many points of resemblance but

often co-existing in a degree which is apt to puzzle any but those who have had special opportunities of studying infantile syphilis, which very few students have in this country, although there is a great field for observation of such cases available in the Westmoreland Lock Hospital for Women, where a large number of syphilitic children are born every year, yet its doors are closed against not only the students of medicine in the Dublin Schools, but against the medical profession generally.

It is to be hoped that facilities will some day be given to our students to acquire by observation and clinical study in this hospital that knowledge which they can now obtain only from such able lectures as those of Dr. Coutts.

Excretory Irritation, and the Action of Certain Internal Remedies on the Skin. By DAVID WALSH, M.D. Edin.; Physician to the Western Skin Hospital, London; Clinical Assistant, Blackfriar's Skin Hospital. London: Baillière, Tindall & Cox. 1897. Pp. 68.

AFTER taking certain foods or drugs, why does the skin sometimes become inflamed? What connection is there between the alimentary canal on the one hand and the skin and other glandular organs on the other? To these questions Dr. Walsh sets himself to give an answer in this suggestive essay. He comes to the conclusion that it is because certain irritants are being excreted that the area or organ in question suffers. He investigates this subject with relation to—I. Drugs; II. The abnormal excretion of certain normal constituents of the body (*e.g.*, bile in jaundice); and III. The poisons produced by micro-organisms in the system. Thus he believes that the rash in the exanthemata is due to the virus itself, or its poisonous products, directly acting on the skin.

The most important practical suggestions to be met with are—(1) that substances which we find capable of irritating one excretory organ may also produce irritation of other excretory organs, even though in some cases there may be no very manifest signs of such irritation; hence such drugs should be used with caution; and (2) it may be in some

cases possible to guide the action of a remedy to the organ which it is wished to affect—*e.g.*, if arsenic is administered for its effect on the skin, this effect may be promoted by the simultaneous exhibition of pilocarpin, in order to determine its action to the surface of the body.

Royat: Medical Guide. By G. H. BRANDT, M.D., and J. EGERTON BRANDT, M.D. Fourth Edition.

UNDATED and without the publisher's name, this excellent Guide to one of the most valuable and popular health-resorts in France has been presented by the authors. Their names are familiar as household words to all visitors to the mineral springs of Royat, in the department of the Puy-de-Dôme.

The Guide is well written, and beautifully illustrated by a series of heliotypes by H. Racle, of Paris. An excellent map of the district on a large scale brings the book to a close. The letterpress covers some 60 pages. It is printed with "encre Lorilleux" by Chaix, rue bergère 20, Paris. The Guide includes a most interesting and exhaustive paper on the geology of Royat and its neighbourhood, which Professor Etheridge, F.R.S., wrote for the authors at their request. The vicinity of the famous watering place abounds in extinct volcanic phenomena, and the town itself is built upon lava, scorïæ, and puzzolana ejected from the craters of Gravenoire, Charade, and de Colière. Intending visitors will find in the book full information as to the composition of the different mineral springs and their therapeutic powers.

The Retrospect of Medicine. Edited by JAMES BRAITHWAITE, M.D. Lond.; assisted by E. F. TREVELYAN, M.D. Lond., B.Sc., M.R.C.P. Volume 115. January--June, 1897. (Issued July, 1897). London: Simpkin, Marshall, Hamilton, Kent and Co. 1897. 8vo. Pp. xxvi. 439.

"BRAITHWAITE'S RETROSPECT" has had a long and useful career. Established fifty-seven years ago, it seems to enjoy perennial youth. The contents of the one hundred and fifteenth volume which lies before us include a synopsis which

contains an abstract of the most practical articles in the volume with other short articles, culled from the Medical Journals up to June 30 of the present year. The volume gives an excellent idea of the most recent contributions to practical medicine and surgery, and to obstetrics and gynaecology; but the most convincing proof of the value of the Retrospect is the fact that it continues to hold its own against the host of modern Medical Journals, with their Epitomes, Periscopes, Abstracts, Excerpts, and "Rundschauen." We heartily congratulate the veteran editor and his able coadjutor, Dr. Trevelyan, on their successful efforts to cull from current medical literature all that is best and destined to live.

The Practitioner: A Journal of Practical Medicine and Surgery. Edited by MALCOLM MORRIS. Old Series, Vol. LVIII. New Series, Vol. V. January to June, 1897. London, Paris, and Melbourne: Cassell & Company, Limited. 1897. 8vo. Pp. 728.

By far the most interesting number in this volume of *The Practitioner* is that for June—the "Queen's Month." It chronicles the advances made in the art of healing during the Victorian era. The accomplished and courtly editor writes:—"I venture to add my humble tribute of congratulation to those which the whole empire, and, indeed, the whole world, is offering to her Majesty on this unprecedented occasion. No class of the community has better cause to celebrate the glory of the Queen's reign than the medical profession, whose work has so largely helped to make it glorious. The success of that work has been materially promoted by her Majesty's enlightened patronage, and by the unfailing exercise of her influence in the cause of progress. The profession has been loyal to her, and she, on her side, has been loyal to it, and among its members she has found some of her most trusted advisers and most valued friends."

The entire volume fully sustains the high reputation which *The Practitioner* has gained as a "Journal of Practical Medicine and Surgery."

PART III.

SPECIAL REPORTS.

REPORT ON GYNÆCOLOGY AND MIDWIFERY.

By E. HASTINGS TWEEDY, Fellow and Examiner, Royal College of Physicians of Ireland; Gynæcologist to Dr. Steevens' Hospital.

- I. Sterilisation of Catgut.
- II. Intrauterine Injections of Steam.
- III. Causation of Uterine Cancer.
- IV. Ectopic Gestation.
- V. Ergot in Pregnancy.
- VI. Animal Extracts and their uses in Gynæcological Practice.
- VII. An Early Diagnostic Sign of Pregnancy.
- VIII. A new Treatment for Gonorrhœal Salpingitis.
- IX. *Post-partum* Hæmorrhage.
- X. Guaiacol in Puerperal Eclampsia.
- XI. Chloroform in Labour.
- XII. Clinical Experience of Murphy's Button.
- XIII. Dangers arising from a Retained Pessary.
- XIV. Pruritus and Hyperemesis Gravidarum.
- XV. Axis Torsion of the Uterus.

Sterilisation of Catgut.—N. Senn claims that catgut is made absolutely sterile by Hofmeister's method, which, as modified by Senn, is—The catgut is wound tightly around a glass tube, immersed twelve to twenty-four hours in a two to four per cent. aqueous formalin solution, immersed in flowing water at least twelve hours to remove the formalin, boiled in water from ten to fifteen minutes. The catgut is then placed in a mixture of absolute alcohol 950, glycerin 50, finely pulverised iodoform 100. This formalin catgut can be reboiled almost any number of times without impairment of its strength.—*American Journal of Obstetrics*, Jan., 1897.

Intrauterine Injections of Steam in Puerperal Endometritis.—

Kahn (*Centralblatt f. Gynäk.*, No. 49, 1896) claims excellent results in seven out of eight cases of septic endometritis after labour or abortion. His practice is to inject superheated steam into the uterine cavity. A metal can, with a spirit lamp and thermometer (which must mark to 200° C.), serves as a boiler, the tubing fitting on to a catheter. The application lasts about half a minute, and never over a full minute. By a tap the current of steam can be interrupted while the catheter is being adjusted before use, lest scalding or burning should occur. The temperature of the steam must be a little above boiling point—about 110° C. Kahn finds that the jet of steam is followed by no bad effects, and gives little or no pain. It actually puts a stop to the tenderness of the uterus usual in puerperal endometritis from retained placenta, &c. Uterine contractions are actively stimulated, and ill-smelling discharges cease. Kahn has no doubt that the steam kills the bacteria in the endometrium, and as it coagulates albumen, all blood vessels and lymphatics are sealed up, and fresh granulations can develop under a protective covering.—*British Medical Journal*, "Epitome," March, 1897.

Causation of Uterine Cancer.—Bäcker (*Arch. f. Gynäk.*, liii., Hft. 1, 1897), from a statistical inquiry, connects the development of uterine cancer with pre-existent endometritis, especially puerperal and chronic in character. Other forms of endometritis do not seem to have the same influence for sterile women, and those with gonorrhœa rarely suffer from cancer. Certain facts support his view, such as the greater frequency of cancer in married women and widows than in the unmarried, and in the poor than in the rich—for the former are more likely to allow an endometritis (fluor albus) to go untreated, and so become chronic; and the influence of inflammation on the development of cancer elsewhere—for example, mastitis and mammary cancer, gastric ulcer, and gastric carcinoma, &c. The influence of labour is not direct, for most cancerous women do not become so till long after the close of the child-bearing period. Bäcker finds no ground for believing that cancer is due to a specific microbe.—*British Medical Journal*, "Epitome," March, 1897.

Ectopic Gestation.—H. A. Kelly has treated ten cases of

ectopic pregnancy by vaginal puncture and drainage; all have recovered rapidly, with no marked suppuration. Kelly employs the same method in all cases of pelvic suppuration which can readily be reached and drained. The sac is punctured through the posterior fornix by sharp scissors, which are opened and withdrawn. After cleaning and irrigation of the sac it is packed with gauze, which is left in several days, and the wound then washed out daily until it closes.

In a case of extrauterine pregnancy, Stouffs, operating through the vagina, removed only the fœtus and blood clots. Copious and repeated irrigation with formalin was employed for the disinfection of the sac, without any toxic symptoms or irritation. Complete recovery.—*The American Journal of Obstetrics*, March, 1897.

Ergot in Pregnancy.—L. Atthill, Dublin, claims that when administered during pregnancy to women in whom a tendency to *post-partum* hæmorrhage is known to exist, ergot tends to prevent the occurrence of hæmorrhage. If so given, in ordinary doses, it does not produce any injurious effect on either mother or child, and seems to delay the beginning of labour. It tends to make the involution of the uterus more perfect, and lessens the chance of the occurrence of subsequent uterine troubles, many of which depend on imperfect involution of that organ. It will not bring on premature labour unless uterine action has previously been set going. In cases of threatened abortion it frequently seems to act as a uterine tonic, and in some cases tends to avert the danger of a miscarriage, provided the ovum is not blighted. If the ovum is blighted, and especially if it is detached, ergot usually hastens its expulsion.

Ovarian Extract.—Jacobs finds, in regard to ovarian extract, that by its use the disagreeable symptoms of the natural or artificial menopause are relieved or disappear. Rapid improvement is constant in cases of chlorosis and of dysmenorrhœa. The extract undeniably influences the psychic troubles accompanying genital lesions. It rapidly overcomes the metrorrhagias of the menopause not connected with new growths. It causes a rapid and constant improvement in the patient's general condition, and its therapeutic action upon the nervous system is manifest from the first

day. The results of the treatment are usually apparent on the second or third day.—“Foreign Epitome,” *American Journal of Obstetrics*.

Ovarian Extract in the Treatment of the Symptoms of the Natural and Artificial Climacteric.—Mond reports twelve cases in which the administration of ovarian extract was followed by the best results. The patients were suffering from various nervous disorders the result of castration, natural menopause, and incomplete development of the uterus and adnexa. The drug causes no disagreeable effects; pulse and temperature remain normal. Improvement showed itself on the second or third day, and in about two weeks the patients believed themselves cured. To exclude suggestive effects, the patients received tablets which looked like those of ovarian extract but contained inert substances; these failed, however, to give relief.—*American Journal of Obstetrics*, July, 1897.

Thyroid Gland Extract as a Galactagogue.—Reasoning from the effect of the ingestion of thyroid gland extract upon other metabolic processes, R. R. Stowell has employed this substance in nine cases of nursing mothers whose milk supply was deficient. In all but two cases it proved an efficient galactagogue, and the milk secreted was of good nutritive quality.—*American Journal of Obstetrics*.

Thyroid Treatment in Gynæcology.—M. R. Latis reports three cases in which he successfully carried out the theory of Hertoghe, who asserts that many uterine affections which are now treated surgically can be cured by the administration of the thyroid gland. Menorrhagia and hæmorrhages due to endometritis, ovaritis, and even cancer, are greatly benefited. This he considers to be owing to the fact that the thyroid juice possesses an inhibitory or vaso-constrictor power upon the pelvic genital organs, which is proved by the gradual diminution and final cessation of the menstrual flow under the prolonged use of the remedy.—*American Journal of Obstetrics*.

In midwifery practice many observers have employed the serum treatment in puerperal sepsis, and, as is to be expected with all new remedies, the results obtained are most conflicting.

It is abundantly obvious, however, that the majority of reputed cures are those occurring in sapræmic cases of blood poison, which would have recovered without the aid of serum. On the other hand, as in a case reported by Dr. Baldy, the severity of the case seemed to be directly increased by the injections, and the patient died in spite of the serum treatment.

Dr. Hirst (*American Journal of Obstetrics*, May, 1897) sums up the objections to the treatment under six heads, as follows :—

1st. Four-fifths of all cases get well without its aid.

2nd. It is difficult to procure a thoroughly reliable preparation.

3rd. The serum is claimed to be of use only in streptococcus poisoning, by no means the only form of germ found in puerperal sepsis.

4th. The treatment is not free from risk.

5th. Reliance on this remedy would probably result in neglect of other forms of treatment.

6th. If, as is said, the good effect of the remedy is due to its power of producing hyperleucocytosis, there are other and simpler agents which will have the same effect.

Gonorrhœal Salpingitis.—Dr. Rob. Morris (*American Journal of Obstetrics*, May, 1897) reports a novel method for the cure of the above disease. He claims immediate and absolute results thereby. The peritoneum is opened through Douglas's *cul-de-sac*, the tubes liberated from adhesions, and the fimbriated extremities brought into view. Then, by means of a hard small catheter, a seven-volume preparation of peroxide of hydrogen is injected, so as to distend the tube and to flow out through the cervix. This is followed by a 2 per cent. solution of formalin. The parts are replaced, the cut surface sutured, and a complete cure results.

Diagnosis of Pregnancy in the Early Months.—Rinmann observed in two cases, as an early symptom of pregnancy, slender cords radiating from the nipple, which he believes to be the hypertrophic acini of the glands. Secretion was not yet present. Rinmann's observation has been confirmed by other observers.—*American Journal of Obstetrics*, Jan., 1897.

Post-partum Hæmorrhage.—In *post-partum hæmorrhage* T. Laird passes the right hand into the uterus, which should be emptied of clots, &c., closes that hand, and with the left compresses the uterine and ovarian arteries of both sides against it, the fingers grasping the left side, the thumb the right. If this does not fully control bleeding in a few minutes, a powerful styptic is applied by a sponge or absorbent cotton held in one hand within the uterus while pressure is still maintained by the other. The vessel may be compressed by pressing the uterus against the right side of the pelvis with the internal hand, leaving the other only the vessels of the left side to compress against the closed hand.—*American Journal of Obstetrics*, March, 1897.

Post-partum Hæmorrhage.—E. S. Bishop holds that compression of the aorta against the vertebral column is the only measure of primary importance in the treatment of *post-partum hæmorrhage*. It should be applied by the ulnar side of the closed hand while the patient is in the dorsal position, and is to be maintained until hæmorrhage ceases. The uterine muscle is given time to rest and regain its contractility, and secondary measures, such as massage of the fundus, ergot, &c., tending to stimulate the uterus to contraction, meet with response. The blood is also retained in the portions of the body which most require it. The point of compression should be changed occasionally, in order to avoid prolonged pressure upon any portion of the sympathetic, and when the pressure is ultimately removed it should be done very gradually, watching meanwhile the effect of the increased blood flow in the uterus. Brandy by mouth or rectum, raising the foot of the bed, hot bottles around the body, and the removal of blood clots or placental tissue are valuable measures after compression of the aorta has been begun. The use of ice, ice water, and douching are condemned as unnecessarily submitting the patient to the danger of pneumonia; the injection of perchloride of iron, as liable to prove ineffective; and tamponing the uterus, as only of temporary value, the exhausted uterine muscle soon failing to contract, and its relaxation allowing fresh hæmorrhage which is concealed by the tampon.—“*Epitome*,” *American Journal of Obstetrics*, Dec., 1896.

Guaiacol in Puerperal Eclampsia.—J. F. R. Appleby (*Boston Med. and Surg. Jour.*, March 18, 1897) prefers guaiacol in the treatment of puerperal eclampsia. He has used it in two cases with “surprising and happy” results. Forty or fifty drops were poured upon the abdomen and gently rubbed in. In a few minutes the pulse became soft, free diaphoresis set in, and the convulsions died away. In both instances there was albuminuria and œdema, and in both the recovery was good. Guaiacol possesses the advantages of ease of application, certainty of action, and speedy relief of urgent symptoms. Its physiological effect is to cause rapid and marked lessening of arterial blood pressure, lowering of temperature, and free diaphoresis.—*British Medical Journal*, “Epitome,” April, 1897.

Chloroform in Labour.—J. N. Upshur believes that chloroform should be used in labour only when imperatively demanded, as he considers that it makes sub-involution almost inevitable, increases the danger of hæmorrhage and of septic infection, and increases the number of still-births by interfering with oxidation of the blood.—*American Journal of Obstetrics*, “Foreign Epitome.”

Clinical Experiences with Murphy's Button.—Marwedel. During the last twelvemonth there were at Czerny's clinic 55 operations in which Murphy's button was used. Anastomosis of stomach and gut, 34 cases; gall bladder and intestines, 3 cases; 29 cases of recovery out of 35 cases of gastro-enterostomy; no bad effects in any case from the button, which was expelled, earliest on the eighth day, latest after forty-five days, mostly on twelfth to fourteenth day.

Dietel. A case of volvulus is related occurring in a woman after salpingo-oöphorectomy and ventrofixation, the immediate cause of which was an error of diet. The operation consisted in resecting a piece of the ileum nearly one and a half yards long, and a union of the resected gut by means of Murphy's button. The button was passed thirty-eight days after the operation.—*American Journal of Obstetrics*, “Foreign Epitome.”

Stomach Pains from the Presence of a Vaginal Pessary.—M. Wiktor (*Wien. med. Blätter*, No. 17, 1897) found in the case of a widow, forty years of age, who had suffered for

four years from severe gastric pain, that there was a vulcanite pessary in the vagina. The pessary, which was introduced by a midwife thirteen years previously for prolapsus uteri, had never been removed, and had caused no trouble as far as the genital organs were concerned. It was round in shape, and had a diameter of 9 cm., and its surface was roughened. There was a circumscribed area of vaginitis, and on the cervix uteri was an inflammatory patch with absence of the mucous membrane. The pessary was removed, and, after a fortnight's antiseptic treatment of the genitals, the pain in the stomach entirely disappeared. The prolapsus uteri et vaginæ had, however, recurred.—“Foreign Epitome,” *British Medical Journal*, Aug., 1897.

Infection of the Bladder by Catheters.—Possner and Frank have made a series of experiments to determine the liability to infection in actual practice. Catheters which had been used in a cystitis case were thoroughly cleaned by rubbing and rinsing in three per cent. carbolic acid solution, after which they were kept in a clean place for about two weeks. After this period the investigators were able to obtain virulent cultures of the *Bacillus coli*, which shows that such a method of disinfection is unreliable, and that thorough sterilisation is indispensable. New catheters were found to contain no specific bacteria and only harmless micro-organisms.—*American Journal of Obstetrics*, “Foreign Epitome,” June, 1897.

Pruritus, Vaginismus, and Hyperemesis Gravidarum.—Schaeffer. Pruritus and vaginismus were caused by a vulvitis pruriginosa which, resisting all treatment and making patient's life unbearable, was permanently cured by removal of both nymphæ and the hymen. Some time after this patient became pregnant, which state was complicated by hyperemesis. After confinement all unpleasant symptoms disappeared. Schaeffer considers the pruritus and vaginismus of neurotic origin. The accompanying inflammatory processes are secondary and reflex in character. The best remedy is the complete removal of these altered tissues.—“Foreign Epitome,” *American Journal of Obstetrics*, June, 1897.

Axis Torsion of the Uterus, especially in Pregnancy.—

Löhlein. Torsion may be produced by a shrinkage of para- or peri-metritic exudates and new growths in the uterus or ovaries. If torsion occurs during pregnancy the condition may simulate ectopic gestation, as shown by one of the cases reported. The valuable diagnostic symptom is difficult urination, probably due to traction upon walls of the bladder.—“Foreign Epitome,” *American Journal of Obstetrics*, June, 1897.

LIP-READING.

WE are sorry to learn from an article in *The Hospital* that the oral system of educating the deaf-mute does not seem likely to realise the high hopes that were formed. A sub-committee of the Directors of the Glasgow Institution for the Education of the Deaf and Dumb has lately reported on the efficacy of the oral system “as an aid to mental development, and as a means of inter-communication between themselves and others.” “The committee visited many schools, both where the pure oral system was taught and where while it was taught in the schools the sign manual system was permitted among the children during play times; but so far as concerned the power of understanding people with whose modes of speech they were not acquainted, and of making themselves intelligible to strangers, the results were certainly not such as to encourage the exclusive use of this system. Even the best lip-readers cannot so follow and understand an ordinary sermon, and that nearly all resort to sign and manual services. Even as regards communication between each other it seems plain that the tendency, so soon as they are free, is to resort to the manual alphabet.”

POPULATION OF FRANCE.

THE *Gazette Médicale de Paris* points out, on the authority of the *Journal Officiel*, that the progressive decrease of the French population which was observed in 1890, 1891, and 1892 was not continued in 1893. In those years deaths in France exceeded births by 38,446, 10,505, and 20,041, respectively. In 1893 there were 874,672 births and 867,526 deaths; the former exceeding by 7,146. The number of female births in 1893 (427,715) was less than that of males (446,957) by 19,242; the male deaths (449,682) exceeded the female (417,844) by 31,838; the female population therefore gains 9,871, the male loses 2,725.

PART IV.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—JAMES LITTLE, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF STATE MEDICINE.

President—J. M. REDMOND, M.D.
Sectional Secretary—NINIAN FALKINER, M.B.

Friday, April 30, 1897.

The PRESIDENT in the Chair.

*On the Dissemination of Micro-organisms, and on the Best Method of
Destroying Germ Emanations from Sewer Gas.*

PROF. CHARLES TICHBORNE read a paper on this subject. [It will be found at page 1.]

SIR CHARLES CAMERON said that he was much interested in the question of volatility of micro-organisms. He had been much startled, he said, by recent papers upon sewage air published by various gentlemen, which appeared to show that the air from sewers in London, Aberdeen, and other places contained a very small number of micro-organisms, much smaller, indeed, than the air above the sewers. He had been much surprised at the statement of an Italian who recently said that it was impossible to discover the bacilli of typhoid fever in the dejecta of patients suffering from enteric fever. According to this authority, several thousands of examinations had been made with the above result. With regard to the statement that liquids would not disengage micro-organisms, he had the utmost distrust in such a statement, and did not believe that these were not the micro-organisms of the

disease in the dejecta of patients. He himself had found great quantities of organisms in the dejecta of patients from Cork-street Hospital. He was much interested in Professor Tichborne's statement that the very bubbles of vapour came up containing the germs contained in the liquid. It has been proved, he said, that sea water, on the calmest day, carries up salt into the air derived from the placid evaporation of the sea water, and, therefore, he could not accept the theory that liquids were unable to disengage the pathogenic bacilli which happened to be present in them. He had traced an outbreak of typhoid fever to milk supplied by a man in whose house there were two typhoid patients. In this case, the sanitary arrangements being rather imperfect, the stools had been kept for several days, until fermentation had occurred, and were then deposited in a receptacle for ashes in the yard, and there being open communication between shop and yard, he concluded that the bacilli had been carried into the shop and became absorbed by the milk. To prove the correctness of this theory, he made many experiments which consisted in placing dejecta of typhoid patients in an open vessel, at a little distance from some milk in vessels, and covering the whole thing with glass; examination revealed swarms of bacilli in the milk. Counter experiments were made at the same time with ordinary dejecta and milk, and no such bacilli were developed. He concluded that during the fermentation of fæces containing the bacilli there was an actual evolution, and that they escaped in gases. Perhaps this accounted for the fact that perfectly fresh fæces were not infective, but that putrefaction was necessary for gases to be evolved and carry the germs into the air. Crude carbolic acid was never used for disinfecting sewers, but Jeyes' liquid was generally used—one part of the liquid to one hundred parts of water; Jeyes' fluid was also more economical.

DR. DOYLE asked if sewer gas, which was a very complex gas, was heavier or lighter than ordinary atmospheric air. Was it to be understood that sewer gas increased the virulent qualities of disease producing organisms, that these organisms were volatile, that they came out of ventilators used to prevent disease, and were carried about like dust. He said that he was in favour of taking away all in-taking and out-taking shafts connected with drains, because he believed that the so-called sewer gases were nature's disinfectants, and, he had no doubt, were more efficacious than many carbolics, &c. The tubercle bacilli went to a certain stage and produced a certain product accompanied with a most disagreeable odour, but the bacilli were destroyed. In Dublin, in connection with the Liffey, there was a large open surface where

the organisms had a chance of getting down; there was a large open space in the Liffey and a muddy shore where the organisms were caught and putrefactive changes continually going on.

DR. S. M. THOMPSON stated that he had read that it was only after decomposition had set in that the virus of typhoid was liberated.

PROFESSOR TICHBORNE, in reply, said, with regard to the question of the transmission of the typhoid germ by sewer gas, or, in other words, the capability of the organisms to rise from water and become permanent contaminations of the atmosphere, that he did not presume to state that such was the fact, but nevertheless he believed that such a thing really did occur. In reference to Jeyes' fluid, he did not know if it was more economical than other disinfectants, and its value depended on the amount of carbolic acid which it contained.

Report of Vaccination Commission, 1896.

The SECRETARY read Dr. Alfred E. Boyd's paper on this Report. [It will be found at page 8.]

DR. A. N. MONTGOMERY, DR. NINIAN FALKINER, SIR C. CAMERON, and DR. MARTLEY spoke.

The Section then adjourned.

Monday, May 10, 1897.

The PRESIDENT in the Chair.

The Recent Failure of Hospital Accommodation in Dublin.

SIR CHARLES CAMERON read a paper on this subject.

In 1895 the author proposed the institution of an Hospitals Board for Dublin City and County on the lines of the London Asylums Board, and invited the representatives of the Sanitary Authorities of the City and County to a Conference on the subject.

The scheme was discussed and was approved by the representatives of several of the local authorities, particularly by those from the North Dublin Board of Guardians. Opposition to the scheme was, however, soon manifested. The Council of the Dublin Sanitary Association passed a resolution condemning it. The physicians of several of the Dublin hospitals opposed it. The scheme, under these adverse influences, had to be abandoned, but he trusted only for a time.

Three arguments were used against this scheme: 1st, that it would be enormously costly; 2nd, that there was ample accommo-

dation for the treatment of infectious diseases in existing hospitals ; 3rd, that it would interfere with medical education.

The author took exception to these reasons, and gave reasons for so doing.

As to the alleged sufficiency of the existing hospital accommodation, the inexorable logic of facts has demolished that argument. No one will now deny that during part of last year and of the present one, scores of patients suffering from infectious diseases were refused admission to the hospitals.

That the scheme would, as alleged, seriously interfere with medical education, seems very improbable. In the first place it did not affect the general or other hospitals in which fever is treated and students taught. No one can decry Edinburgh and Glasgow as medical schools of the first rank, and yet the students in those cities have to go to special fever hospitals to acquire a knowledge of contagious diseases. It is the same in London and other places. This argument has been so thoroughly refuted in Dr. M'Hugh's admirable address at St. Vincent's Hospital, that I need make no further observation in reference to it.

The recent failure of hospital accommodation in Dublin justifies me in bringing the subject of isolation hospitals and convalescents' home again before the Academy of Medicine.

During the six years ended in 1896 the zymotic death-rate was moderate in Dublin, nearly 2·6 per 1,000 of the population, and was decidedly below the mean rate of the English towns. With the exception of an epidemic of small-pox and a rather large amount of scarlet fever, there were no epidemics in those years, until nearly the close of the sixth one. The zymotic death-rate in the first half of 1896 was reduced to the unprecedentedly low figure of 1 per 1,000, and the fever hospitals were comparatively empty. In the second half of the year three diseases were epidemic—namely, measles, scarlet fever, and whooping-cough. At the last week of 1895 there were in hospital 11 cases of small-pox, 0 of measles, 112 of scarlet fever, 1 of typhus fever, and 65 of typhoid fever—total, 189. In the last week of 1896 there were 162 cases of measles, 193 of scarlet fever, 14 of typhus fever, and 50 of typhoid fever—total, 419.

In 1894 the Public Health Committee made the strongest representations to the Boards of Guardians as to the absolute necessity for providing accommodation for small-pox, which was at the time threatening to assume an epidemic form. It was, however, not until Cork-street and the Hardwicke hospitals were overcrowded with small-pox patients that the South Dublin

Board of Guardians erected sheds at Kilmainham, not far from the workhouse. A large number of convalescing patients were removed to the sheds, though some of the patients did not relish the idea that they were virtually transferred to a Union hospital.

Last year, when it became evident that measles and scarlet fever were becoming epidemic, the Public Health Committee made strong representations to the Boards of Guardians as to the urgent necessity for making provision to meet the epidemics. The same delay which characterised the action of the Guardians in 1894 was displayed in 1896, and it was not until long after the hospitals had ceased to afford sufficient accommodation for infectious cases that hospital accommodation was provided at Kilmainham, and the congestion of the hospitals diminished. It was most fortunate that during the small-pox epidemic there were comparatively few cases of other zymotic diseases. Had the converse been the case there would not have been sufficient accommodation for them. Unfortunately when measles became epidemic, scarlet fever also was prevalent, and the severer cases of those diseases were so numerous that the hospitals were crowded with them. Very bad cases of measles and erysipelas had to be retained in tenements of the most wretched kind, as no hospital accommodation could be procured for them.

At the period when the congestion of the hospitals had attained its maximum a case of small-pox occurred on the south side of the city. Small-pox broke out and no hospital was in a position to admit the first three patients. Fortunately the disease did not spread.

Recent events have proved that if more than one disease is extensively epidemic in Dublin, the hospital accommodation is insufficient. It must be admitted that in any future epidemic of small-pox it would be desirable to provide hospital accommodation outside the city.

As regards measles epidemics, there will always be a difficulty in providing accommodation for the patients, on account of their great number. In Glasgow a determination has recently been arrived at to provide full accommodation to meet the wants of the largest epidemic of this disease.

In Edinburgh the foundation stone of a fever hospital has just been laid. It will accommodate 600 patients (including measles cases).

The author contends as follows:—"A small-pox or other infectious diseases hospital, established by a conjoint Board, would be used by both rich and poor. No one would feel pauperised by

being an inmate of a Board's hospital, and those who could afford to pay for it might have separate rooms and special attendance. Towards the support of such an hospital and the maintenance of a home for convalescents for fever—which we sadly want—the funds derived from the poor rate could be applied. I am, therefore, still of opinion that an Infectious Diseases Hospitals Board should be constituted for the metropolitan districts, and that the Board should establish a small-pox hospital, a home for convalescents, and make provision for epidemics of measles or scarlet fever."

DR. FALKINER said that there ought to be no doubt in the minds of the citizens of Dublin that the hospital accommodation was quite insufficient in the event of three or four epidemics occurring at the same time. He asked if it was possible to stop the spread of measles by taking measures, and if not, was it possible to provide for all the children—say under five years of age—who were living in a large city like Dublin, and who had never been in contact with the infection of measles. He believed that if medical officers took very strict precautions at the beginning of epidemics, the disease could be stopped, and he considered that measles was not a disease which must spread broadcast of necessity.

DR. J. W. MOORE said that the Public Health Act of 1896 conferred upon rural authorities all the rights of combining that were previously confined to urban authorities. He strongly advocated an isolation hospital for small-pox, and thought it a burning disgrace that Dublin did not possess such a hospital. He also thought it a shame that the local authorities had never availed themselves of the full powers given them in 1878 to establish convalescent homes for the treatment of those recovering from infectious diseases. It was not necessary to keep measles or scarlatina in a ward for three and six weeks respectively, as it endangered the other patients in the ward, but a convalescent home was required to which to send them. He brought forward statistics of the enormous number of cases of measles and whooping-cough which occurred in Dublin during the first three months of 1897, and showed that it would not be possible for so many cases to be treated in any set of permanent hospitals. Did Sir Charles Cameron think that if the hospital accommodation had been sufficient in Dublin, the extent of the epidemic would have been materially restricted, and that, as a result of hospital accommodation, measles spread indefinitely in Dublin? He (Dr. Moore) said that, so far as the Meath Hospital was concerned, hospital accommodation had not been exhausted, as out of forty-four beds for infectious cases, not more than thirty had been occupied at any one time, and the rest were at the disposal

of the boards of governors if they had agreed to the terms of the Meath Hospital, which were that a sum of two-and-sixpence per head a day should be paid, in order to cover expenses. Only one shilling and sixpence had been offered but was not accepted. He maintained that there was need of an isolation hospital for small-pox, and that it was a disgrace that no convalescent accommodation was provided for infectious cases. He held that the existing law gave the authorities of Dublin perfect power to unite for the proper purpose. He had seen children admitted to hospital suffering from three epidemic diseases. He agreed with Dr. Falkiner that the early isolation of children where measles had broken out—provided the children had not been brought into actual contact with infection—was a check on their being attacked with the disease.

DR. DOYLE thought that an isolation hospital was necessary. He thought that ground for the purpose of erecting temporary institutions should be taken, and said that the best results in the treatment of infectious diseases had been obtained in such buildings. It was a question whether it would not be better for the community at large that all hospitals should be built in such a condition that, after a certain number of years, they should be burnt down. He thought that medical officers in charge of dispensaries should go round the patients collected in the waiting-rooms, and there and then detect those that should be separated. He had known numerous cases of children brought to dispensaries, and in the waiting-room take infectious diseases.

DR. DELAHOYDE considered that there was an urgent need of isolation hospitals. There should be one body, composed principally of medical men, to look after the erection of such hospitals. At present there was divided authority, and therefore divided responsibility, devolving on the Local Government Board, Boards of Guardians, and the Sanitary Authorities. With regard to Dr. Doyle's suggestion about selecting patients with infectious diseases from those collected in the waiting-rooms, he said that if the authorities required that done they might appoint a proper staff for the purpose, as he, for one, as a dispensary medical officer, would not discharge that duty.

DR. POTTER was of opinion that any communicable disease should not be treated in a general hospital. He agreed with Dr. Doyle in saying that hospitals for the treatment of infectious diseases should be of a temporary nature, and considered that temporary buildings could be erected at small cost.

SIR C. CAMERON, in reply, said that he did not agree with Dr. Moore as to increased powers having been given to rural authorities.

The Boards of Guardians had always power to combine, but had only power to act like an ordinary sanitary authority, and the urban sanitary authority had not power to combine with a rural sanitary authority. He objected altogether to hospitals for infectious purposes being limited to paupers or to subscribers to hospitals. With respect to the accommodation for measles cases, he said that if there were enormous numbers of cases, it would be difficult to obtain accommodation, but surely it was the want of accommodation that led to the enormous number of cases. He gave instances to show that there really had been lack of hospital accommodation during the epidemics. During the epidemics, notification, he said, had really been of great use. He urged that the notification of measles in Rathmines should be made compulsory.

Proposed by SIR C. CAMERON; seconded by J. W. MOORE:—

“That the Section of State Medicine of the Academy of Medicine is of opinion that the Sanitary Authority of the Dublin District should provide accommodation for convalescents from infective diseases, with the twofold object of checking the spread of such diseases and of relieving the congestion of hospitals during epidemics. The Section is further of opinion that provision should be made by above Authorities to provide like accommodation for small-pox cases.”

The Section then adjourned.

SECTION OF OBSTETRICS.

President—LOMBE ATTHILL, M.D.

Sectional Secretary—DR. F. W. KIDD, M.D.

Friday, April 23rd, 1897.

The PRESIDENT in the Chair.

Specimens.

DR. E. HASTINGS TWEEDY showed an ovarian cyst with adhesions.

DR. ALFRED SMITH showed a large hæmatosalpinx with hæmatoma of the ovary which he removed from a girl aged twenty. The external examination, taken with the history of pain, rise of temperature, &c., pointed to an appendicitis. This was negatived by finding on the bimanual examination a large tumour filling the right side of the pelvis. But it was found, while removing the tumour, that the vermiform appendix was adherent to it, and lay right across the surface of it. The adhesions were numerous and rather troublesome. Recovery.

DR. W. J. SMYLY showed an ovarian tumour and carcinomatous uterus.

Strangulation of an Intraligamentous Fibro-myoma which formed contents of Inguinal Hernia.

DR. ALFRED SMITH and MR. M'ARDLE read notes on a case of broad-ligament myoma strangulated by protrusion through inguinal canal, and exhibited specimen.

DR. ALFRED SMITH saw the case in consultation with Surgeon M'Ardle, who demonstrated the large hernial opening and the tumour. The history of pregnancy, the appearance of the tumour, and its elastic feel gave the impression that the case was one of ectopic gestation, probably in the cornua of a bicornis uterus; and accordingly Dr. Smith, through permission of Mr. M'Ardle, performed abdominal section. He noticed that the handling of the tumour did not cause any rhythmic contractions. On closer inspection he found that he could differentiate two masses; one was more or less pedunculated, and was evidently the portion that had descended into the hernial sac, and the other filled the right side of the pelvis and was firmly wedged there. The two masses were united together by a broad base. He incised the capsule to determine the nature of the contents, and found it was not a cyst, but a soft œdematous tumour, the tissue of which tore easily with the finger; he then removed the pedunculated lobe, and rapidly enucleated the remaining portion out of the fold of the broad ligament. Professor McWeeney reports the specimen to be an intraligamentous fibroid undergoing mucoid degeneration. Points of interest—1st. The difficulty in diagnosing the tumour; 2nd. The presence of an intraligamentous uterine fibroid in an inguinal hernial sac. Patient's recovery was rapid.

DR. E. WINIFRED DICKSON asked if there was any bowel down together with the tumour, or if only the tumour was strangulated.

DR. SMYLY asked if the tumour was connected with the round ligament. It would appear to him a likely origin of growth. He also asked why a new opening was made in the abdominal wall instead of enlarging the existing one.

MR. M'ARDLE, in reply, said that there was no bowel down along with the tumour. It was the second time that stercoraceous vomiting had come under his notice in connection with troubles in close proximity to the end of the ileum. He gave a case where an œdematous ovarian tumour had pressed on the ileum causing spasm, which produced obstruction. With regard to Dr. Smyly's question about the second opening, he (Mr. M'Ardle) said that he had

avoided any incision which would endanger the deep epigastric artery as well as the arteries of the rectus muscle, the patient having been for a considerable time under chloroform. Also, it was impossible to get inwards because the tumour was so large, crushing the uterus to the left side.

DR. SMITH, in reply, said that he thought at first he had to deal with a bicornuous uterus. He found that the round ligament was apparently quite right on each side.

The Use and Abuse of Ergot in Obstetrics.

DR. T. MORE MADDEN read a paper on this subject. [It will be found at page 185.]

DR. ALFRED SMITH said that he was rather surprised that Dr. Madden should advocate ergot. Formerly ergot was largely used, but latterly he had not used it at all.

DR. HORNE said that his experience corresponded greatly with Dr. Smith's. Some years ago he had been in the habit of using ergot, but latterly he had practically given up ergot altogether, except in cases of severe post-partum hæmorrhage occurring in the third stage of labour. The one great objection to it was that when given by the mouth in sufficiently large doses intense sickness was produced. He did not consider it of much use in the first or second stage of labour. If used at all, he preferred to use it hypodermically.

DR. KIDD considered the question about the use of ergot a very important one. He was not prepared, he said, to join either side as an extremist. He would be sorry to use ergot in the number of cases in which Dr. Madden used it, and he would be sorry to discard it altogether. The principal use to which he put ergot was after the completion of labour and during convalescence. With regard to the question of inertia, there are many other means to hand just as good as ergot, and they had not the dangers which were attributable to ergot. He had never found any of the preparations of ergot to act quickly enough in those breech cases to which Dr. Madden had referred, and in which time was of value. He had found the liquid preparations of ergot as supplied to hospitals extremely unstable and unreliable, and thought ergotine and ergole much more reliable. He believed that ergot should not be used during the first or second stage of labour unless in the case of a woman who was known to be a habitual bleeder. Ergot combined with opium was useful in relieving after-pains.

DR. MORE MADDEN having replied,

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D. Univ. Dubl.;
F.R.C.P.I.; F. R. Met. Soc.;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, July 17, 1897.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	June 26	July 3	July 10	July 17		June 26	July 3	July 10	July 17
Armagh -	28·0	49·1	0·0	21·0	Lisburn -	17·0	8·5	12·8	8·5
Ballymena	16·9	5·6	33·8	0·0	Londonderry	22·0	22·0	20·4	9·4
Belfast -	20·2	14·8	18·7	19·3	Lurgan -	13·7	18·2	13·7	22·8
Carrickfergus	11·7	5·8	17·5	11·7	Newry -	12·1	24·1	16·1	20·1
Clonmel -	4·9	9·8	9·8	4·9	Newtownards	45·4	22·7	5·7	11·3
Cork -	20·1	23·5	22·8	20·1	Portadown -	12·4	55·7	12·4	30·9
Drogheda -	19·0	30·4	19·0	11·4	Queenstown	11·5	11·5	23·0	5·7
Dublin -	21·5	19·4	20·1	23·1	Sligo -	15·2	10·2	35·5	0·0
Dundalk -	20·9	0·0	12·6	4·2	Tralee -	33·6	11·2	16·8	11·2
Galway -	18·9	26·4	15·1	11·3	Waterford -	4·0	37·8	17·9	21·9
Kilkenny -	14·2	27·8	18·9	4·7	Wexford -	18·1	22·6	13·5	9·0
Limerick -	8·4	26·7	23·9	26·7					

In the week ending Saturday, June 26, 1897, the mortality in thirty-three large English towns, including London (in which the rate was 14·6), was equal to an average annual death-rate of 15·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·4 per 1,000. In Glasgow the rate was 18·1. In Edinburgh it was 22·2.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 19·4 per 1,000 of their aggregate population, which, for the purposes of this return, is estimated at 984,720.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in seventeen of the districts to 7·6 in Drogheda—the 5 deaths from all causes registered in that district comprising 1 from scarlatina and 1 from whooping-cough. Among the 109 deaths from all causes registered in Belfast are 1 from whooping-cough, 2 from diphtheria, 3 from simple continued fever, 3 from enteric fever, and 3 from diarrhoea. The 29 deaths in Cork comprise 1 from typhus and 2 from whooping-cough.

In the Dublin Registration District the registered births amounted to 175—85 boys and 90 girls; and the registered deaths to 146—69 males and 77 females.

The deaths, which are 5 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·8 in every 1,000 of the population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 21·5 per 1,000. During the first twenty-five weeks of the current year the death-rate averaged 34·3, and was 5·4 over the mean rate in the corresponding period of the ten years 1887–1896.

Only 13 deaths from zymotic diseases were registered, being 6 below the average for the corresponding week of the last ten years, and 8 under the number for the previous week. They comprise 2 from measles, 1 from scarlet fever (scarlatina), 1 from whooping-cough, 5 from diphtheria, and 2 from diarrhoea.

There were not any cases of measles among the hospital admissions. Eleven measles patients were discharged, 1 patient died, and 23 remained under treatment on Saturday, being 12 under the number in hospital at the close of the preceding week.

The number of cases of scarlatina admitted to hospital was 18, being 6 in excess of the admissions in the preceding week, but 9 under the number in the week ended June 12. Twenty-two scarlatina patients were discharged, 1 patient died, and 112 remained under treatment on Saturday, being 5 under the number in hospital at the close of the preceding week. This number is exclusive of 26 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Seven cases of enteric fever were admitted to hospital, being 3 over the admissions in the preceding week, and equal to the

number in the week ended June 12. Four patients were discharged, and 31 remained under treatment on Saturday, being 3 over the number in hospital on that day week.

The decline in the mortality from diseases of the respiratory system noted in the return for the preceding week has not continued, the deaths from these diseases registered amounting to 29, or 4 in excess of the average for the corresponding week of the last ten years, and 14 over the low number for the previous week. The 29 deaths comprise 12 from bronchitis, 10 from pneumonia, and 1 from croup.

In the week ending Saturday, July 3, the mortality in thirty-three large English towns, including London (in which the rate was 13·5), was equal to an average annual death-rate of 14·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·7 per 1,000. In Glasgow the rate was 19·0, and in Edinburgh it was 18·0.

The average annual death-rate in the twenty-three principal town districts of Ireland was 19·4 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·4 per 1,000, the rates varying from 0·0 in fourteen of the districts to 14·0 in Armagh—the 7 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 80 deaths from all causes registered in Belfast are 2 from whooping-cough, 1 from diphtheria, 3 from enteric fever, and 1 from diarrhoea. The 19 deaths in Limerick comprise 2 from scarlatina. The 6 deaths in Newry comprise 1 from measles and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 194—94 boys and 100 girls; and the registered deaths to 136—55 males and 81 females.

The deaths, which are 29 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·3 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 19·4 per 1,000. During the first twenty-six weeks of the current year the death-rate averaged 33·7, and was 4·9 over the mean rate in the corresponding period of the ten years 1887–1896.

The number of deaths from zymotic diseases registered was 15, being 2 over the low number for the preceding week, but 8 under the

average for the twenty-sixth week of the last ten years, The 15 deaths consist of 2 from measles, 2 from scarlet fever (scarlatina), 1 from influenza, 1 from whooping-cough, 4 from diphtheria, 1 from cerebro-spinal meningitis, 1 from cholera, 2 from diarrhoea, and 1 from erysipelas.

The number of cases of scarlatina admitted to hospital was 14, being 4 under the admissions in the preceding week. Twenty-eight scarlatina patients were discharged, 1 died, and 97 remained under treatment on Saturday, being 15 under the number in hospital at the close of the preceding week. This number does not include 21 convalescents at Beneavin, Glasnevin.

Seven cases of enteric fever were admitted to hospital, being equal to the admissions in the preceding week. Ten patients were discharged, and 28 remained under treatment on Saturday, being 3 under the number in hospital on that day week.

The hospital admissions for the week included, also, 2 cases of measles. Eleven measles patients were discharged, and 14 remained under treatment on Saturday, being 9 under the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system fell to 23, which number is equal to the average for the corresponding week of the last ten years. The 23 deaths comprise 12 from bronchitis, 6 from pneumonia, and 1 from pleurisy.

In the week ending Saturday, July 10, the mortality in thirty-three large English towns, including London (in which the rate was 15·1) was equal to an average annual death-rate of 15·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·7 per 1,000. In Glasgow the rate was 16·7, and in Edinburgh it was 18·3.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 19·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·3 per 1,000, the rates varying from 0·0 in eighteen of the districts to 5·6 in Tralee—the 3 deaths from all causes registered in that district comprising 1 from diarrhoea. Among the 101 deaths from all causes registered in Belfast are 3 from whooping-cough, 1 from simple continued fever, 3 from enteric fever, and 5 from diarrhoea. The 33 deaths in Cork comprise 2 from measles and 1 from whooping-cough.

In the Dublin Registration District the registered births amounted to 260—129 boys and 131 girls; and the registered deaths to 145—69 males and 76 females.

The deaths, which are 7 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·6 in every 1,000 of the population. Omitting the deaths (numbering 10) of persons admitted into public institutions from localities outside the district, the rate was 20·1 per 1,000. During the first twenty-seven weeks of the current year the death-rate averaged 33·3, and was 4·8 over the mean rate in the corresponding period of the ten years 1887–1896.

Only 13 deaths from zymotic diseases were registered, being 11 under the average for the corresponding week of the last ten years, and 2 under the number for the previous week. They comprise 1 from scarlet fever (*scarlatina*), 1 from typhus, 3 from influenza and its complications, 2 from whooping-cough, 2 from diphtheria, 1 from enteric fever, and 2 from diarrhoea.

The weekly number of cases of *scarlatina* admitted to hospital rose to 25. Twenty-five *scarlatina* patients were discharged, and 97 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week. This number does not include 24 convalescents at Beneavin, Glasnevin.

Eight cases of enteric fever were admitted to hospital, being 1 over the admissions for each of the two weeks preceding. Eight patients were discharged, 1 died, and 27 remained under treatment on Saturday, being 1 under the number in hospital on that day week.

The hospital admissions included also 2 cases of measles and 2 of typhus; 12 cases of the former and 3 of the latter disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system declined to 18, or 3 under the average for the corresponding week of the last ten years. The 18 deaths comprise 4 from bronchitis and 7 from pneumonia.

In the week ending Saturday, July 17, the mortality in thirty-three large English towns, including London (in which the rate was 16·3), was equal to an average annual death-rate of 16·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·9 per 1,000. In Glasgow the rate was 15·6, and in Edinburgh it was 21·3.

The average annual death-rate in the twenty-three principal town districts of Ireland was 19·2 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the twenty-three districts were equal to an annual rate of 1·2 per 1,000, the rates varying from 0·0 in nineteen of the districts to 4·0 in Newry—the 5 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 104 deaths from all causes registered in Belfast are 2 from measles, 2 from typhus, 2 from whooping-cough, 1 from simple continued fever, and 4 from diarrhœa.

In the Dublin Registration District the registered births amounted to 217—103 boys and 114 girls; and the registered deaths to 162—88 males and 74 females.

The deaths, which are 14 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·2 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 23·1 per 1,000. During the first twenty-eight weeks of the current year the death-rate averaged 33·0, and was 4·7 over the mean rate in the corresponding period of the ten years 1887–1896.

Only 13 deaths from zymotic diseases were registered. The average number for the corresponding week of the last ten years was 24. The 13 deaths comprise 1 from measles, 1 from scarlet fever (scarlatina), 1 from influenza, 3 from whooping-cough, 4 from enteric fever, and 2 from diarrhœa.

Twenty-six cases of scarlatina were admitted to hospital against 25 in the preceding week, and 14 in the week ended July 3. Thirteen scarlatina patients were discharged, 1 died, and 109 remained under treatment on Saturday, being 12 over the number in hospital at the close of the preceding week. There were also 24 convalescents at Beneavin, Glasnevin.

The cases of enteric fever admitted to hospital amounted to 20, being 12 in excess of the admissions in the preceding week. Four patients were discharged, 2 died, and 41 remained under treatment on Saturday, being 14 over the number in hospital on that day week.

The hospital admissions included also 3 cases of typhus, but no cases of measles were received. Six cases of the former and 7 of the latter disease remained under treatment in hospital on Saturday.

Diseases of the respiratory system caused 27 deaths, being 5 in excess of the average for the corresponding week of the last ten years, and 9 over the number for the previous week. The 27 deaths comprise 12 from bronchitis, 11 from pneumonia, and 1 from croup.

VITAL STATISTICS

For four weeks ending Saturday, August 14, 1897.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	July 24	July 31	Aug. 7	Aug. 14		July 24	July 31	Aug. 7	Aug. 14
Armagh -	56.1	35.1	42.1	7.0	Lisburn -	12.8	25.7	12.8	12.8
Ballymena	5.6	22.5	11.3	0.0	Londonderry	15.7	17.3	9.4	22.0
Belfast -	20.2	25.8	27.1	30.6	Lurgan -	13.7	22.8	18.2	9.1
Carrickfergus	35.1	5.8	11.7	5.8	Newry -	24.1	12.1	36.2	28.2
Clonmel -	0.0	14.6	58.5	82.9	Newtownards	17.0	22.7	17.0	22.7
Cork -	18.0	16.6	18.7	22.1	Portadown	30.9	18.6	24.7	12.4
Drogheda -	26.6	15.2	19.0	26.6	Queenstown	5.7	11.5	17.2	5.7
Dublin -	22.2	22.7	21.6	25.8	Sligo -	25.4	66.0	10.2	10.2
Dundalk -	29.3	29.3	12.6	12.6	Tralee -	22.4	5.6	28.0	33.6
Galway -	22.7	26.4	0.0	26.4	Waterford	25.9	25.9	15.9	11.9
Kilkenny -	0.0	23.6	9.4	14.2	Wexford -	13.5	13.5	22.6	4.5
Limerick -	19.6	32.3	19.6	16.8					

In the week ending Saturday, July 24, 1897, the mortality in thirty-three large English towns, including London (in which the rate was 20.0), was equal to an average annual death-rate of 19.3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19.5 per 1,000. In Glasgow the rate was 20.1. In Edinburgh it was 20.6.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 20.6 per 1,000 of their aggregate population, which, for the purposes of this return, is estimated at 984,720.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2.4 per 1,000, the rates varying from 0.0 in fifteen of the districts to 8.1 in Newry—

the 6 deaths from all causes registered in that district comprising 1 from measles and 1 from whooping-cough. Among the 109 deaths from all causes registered in Belfast are 4 from whooping-cough, 1 from simple continued fever, 3 from enteric fever, and 11 from diarrhœa.

In the Dublin Registration District the registered births amounted to 194—95 boys and 99 girls; and the registered deaths to 156—86 males and 70 females.

The deaths, which are 1 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·3 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 22·2 per 1,000. During the first twenty-nine weeks of the current year the death-rate averaged 32·6, and was 4·5 over the mean rate in the corresponding period of the ten years 1887—1896.

The number of deaths from zymotic diseases registered was 25, being 12 over the low number for each of the two weeks preceding, but 4 under the average for the 29th week of the last ten years. The 25 deaths comprise 3 from measles, 2 from scarlet fever (scarlatina), 1 from influenza, 4 from whooping-cough, 3 from diphtheria, 1 from ill-defined fever, 6 from diarrhœa, 1 from dysentery, and 1 from erysipelas.

The weekly number of cases of scarlatina admitted to hospital, which had risen from 14 in the week ended July 3 to 25 in the following week and 26 in the week ended July 17, fell to 14. Fifteen scarlatina patients were discharged, 2 died, and 106 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week. This number is exclusive of 23 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 16, being 4 under the admissions in the preceding week, but 8 over those in the week ended July 10. Six patients were discharged, and 51 remained under treatment on Saturday, being 10 over the number in hospital on that day week.

The hospital admissions for the week included also 5 cases of measles and 1 case of typhus: 10 cases of the former and 6 of the latter disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 18 in the week ended July 10 to 27 in the following week, fell to 17, or 4 under the average for the corresponding week of the last ten years. The 17 deaths comprise 9 from bronchitis, 5 from pneumonia, and 1 from croup.

In the week ending Saturday, July 31, the mortality in thirty-three large English towns, including London (in which the rate was 23·6), was equal to an average annual death-rate of 22·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·2 per 1,000. In Glasgow the rate was 18·6, and in Edinburgh it was 18·0.

The average annual death-rate in the twenty-three principal town districts of Ireland was 23·2 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in twelve of the districts to 10·2 in Sligo—the 13 deaths from all causes registered in that district comprising 1 from typhus and 1 from diarrhoea. Among the 139 deaths from all causes registered in Belfast are 1 from whooping-cough, 1 from diphtheria, 3 from enteric fever, and 16 from diarrhoea. The 13 deaths in Waterford comprise 1 from whooping-cough and 3 from diarrhoea.

In the Dublin Registration District the registered births amounted to 208—124 boys and 84 girls; and the registered deaths to 153—80 males and 73 females.

The deaths, which are 9 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·8 in every 1,000 of the population. Omitting the death of one person admitted to hospital from without the district, the rate was 22·7 per 1,000. During the first thirty weeks of the current year the death-rate averaged 32·3, and was 4·3 over the mean rate in the corresponding period of the ten years 1887–1896.

The number of deaths from zymotic diseases registered was 20, being 9 below the average for the corresponding week of the last ten years, and 5 under the number for the previous week. The 20 deaths comprise 1 from scarlet fever (scarlatina), 1 from influenza, 1 from whooping-cough, 3 from diphtheria, 1 from enteric fever, 1 from choleraic diarrhoea, and 8 from diarrhoea.

Twenty-two cases of scarlatina were admitted to hospital, being 8 in excess of the admissions in the preceding week, but 4 under those in the week ended July 17. Twenty-eight scarlatina patients were discharged, and 100 remained under treatment on Saturday, being 6 under the number in hospital on that day week. This number is exclusive of 23 convalescents at Beneavin, Glasnevin.

The weekly number of cases of enteric fever admitted to hospital, which had fallen from 20 for the week ended July 17 to 16 for the

following week, further declined to 12. Nine patients were discharged, 1 died, and 53 remained under treatment on Saturday, being 2 over the number in hospital at the close of the preceding week.

Eight cases of measles were admitted to hospital, against 5 in the preceding week. One patient died, and 17 remained under treatment in hospital on Saturday.

Diseases of the respiratory system caused 19 deaths, being equal to the average for the corresponding week of the last ten years, and 2 over the number for the previous week. The 19 deaths comprise 9 from bronchitis and 6 from pneumonia.

In the week ending Saturday, August 7, the mortality in thirty-three large English towns, including London (in which the rate was 25·7), was equal to an average annual death-rate of 26·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·5 per 1,000. In Glasgow the rate was 21·1, and in Edinburgh it was 19·6.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 22·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 5·1 per 1,000, the rates varying from 0·0 in fifteen of the districts to 10·4 in Belfast and 12·4 in Portadown—the 146 deaths from all causes in Belfast comprising 2 from whooping-cough, 2 from simple continued fever, 7 from enteric fever, and 45 from diarrhoea; and the four deaths in Portadown comprising 2 from diarrhoea. Among the 27 deaths from all causes registered in Cork are one from typhus, 3 from whooping-cough, and 3 from diarrhoea. The 6 deaths in Londonderry comprise 2 from diarrhoea.

In the Dublin Registration District the registered births amounted to 179—87 boys and 92 girls; and the registered deaths to 150—83 males and 67 females.

The deaths, which are 4 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·4 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 21·6 per 1,000. During the first thirty-one weeks of the current year the death-rate averaged 32·0, and was 4·2 over the mean rate in the corresponding period of the ten years 1887–1896.

Thirty-two deaths from zymotic diseases were registered, being

4 in excess of the average for the corresponding week of the last ten years, and 12 over the number for the previous week. They comprise 4 from scarlet fever (scarlatina), one from whooping-cough, one from diphtheria, one from enteric fever, 2 from cholera, 18 from diarrhoea (against an average of 12 in the corresponding week of the last ten years), 3—in the Richmond District Lunatic Asylum—from *béri-béri*, and one from cerebro-spinal meningitis. All of the deaths from diarrhoea were of children under 5 years of age.

As in the week preceding, 22 cases of scarlatina were admitted to hospital. Twenty scarlatina patients were discharged, 3 died, and 99 remained under treatment on Saturday, being one under the number in hospital at the close of the preceding week. This number does not include 22 convalescents under treatment at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 11, being 1 under the admissions in the preceding week. Eight patients were discharged, and 56 remained under treatment on Saturday, being 3 over the number in hospital on that day week.

The weekly number of cases of measles admitted to hospital, which had risen from 5 in the week ended July 24 to 8 in the following week, further rose to 27. Three patients were discharged, and 41 remained under treatment in hospital on Saturday, being 24 over the number in hospital on Saturday, July 31.

Twenty deaths from diseases of the respiratory system were registered, being 1 over the number for the preceding week, and 4 over the average for the 31st week of the last ten years. They comprise 11 from bronchitis, 5 from pneumonia, and one from croup.

In the week ending Saturday, August 14, the mortality in thirty-three large English towns, including London (in which the rate was 26·2), was equal to an average annual death-rate of 29·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·0 per 1,000. In Glasgow the rate was 22·6, and in Edinburgh it was 14·4.

The average annual death-rate in the twenty-three principal town districts of Ireland was 24·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the 23 districts were equal to an annual rate of 6·7 per 1,000, the rates varying from 0·0 in ten of the districts to 12·6 in Dundalk—the 3 deaths from all causes registered in that district consisting of 1 from whooping-cough and 2 from diarrhoea. Among the 165

deaths from all causes registered in Belfast are 5 from whooping-cough, 2 from diphtheria, 1 from simple continued fever, 8 from enteric fever, and 38 from diarrhoea. The 32 deaths in Cork comprise 5 from diarrhoea. Of the 14 deaths in Londonderry 4 were from diarrhoea. The 6 deaths in Waterford comprise 3 from diarrhoea.

In the Dublin Registration District the registered births amounted to 198—105 boys and 93 girls; and the registered deaths to 178—97 males and 81 females.

The deaths, which are 23 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·5 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 25·8 per 1,000. During the first thirty-two weeks of the current year the death-rate averaged 31·8, and was 4·1 over the mean rate in the corresponding period of the ten years 1887–1896.

Fifty-three deaths from zymotic diseases were registered, being 22 in excess of the average for the corresponding week of the last ten years, and 21 over the number for the previous week. They comprise 3 from scarlet fever (scarlatina), one from influenza, 5 from whooping-cough, 4 from enteric fever, 38 from diarrhoea—against an average of 15 for the corresponding week of the last ten years—and one from dysentery. Of the 38 deaths from diarrhoea, 34 were of children under 5 years of age.

Twenty-six cases of scarlatina were admitted to hospital, against 22 admissions in each of the two weeks preceding, and 14 in the week ended July 24. Nineteen scarlatina patients were discharged, 2 died, and 104 remained under treatment on Saturday, being 5 over the number in hospital on that day week. In addition, 21 convalescents remained under treatment at Beneavin, Glasnevin.

As in the week preceding, 11 cases of enteric fever were admitted to hospital. Five patients were discharged, one died, and 61 remained under treatment on Saturday, being 5 over the number in hospital at the close of the preceding week.

The weekly number of cases of measles admitted to hospital fell to 16. Four patients were discharged, and 53 remained under treatment on Saturday, being 12 over the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 17, being 3 over the average for the corresponding week of the last ten years, but 3 under the number for the previous week. The 17 deaths comprise 8 from bronchitis, 6 from pneumonia, and one from croup.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of July, 1897.

Mean Height of Barometer, -	-	-	30·003 inches.
Maximal Height of Barometer (on 11th, 9 a.m.),			30·361 „
Minimal Height of Barometer (on 20th, 7 a.m.),			29·601 „
Mean Dry-bulb Temperature,	-	-	60·3°.
Mean Wet-bulb Temperature,	-	-	56·6°.
Mean Dew-point Temperature,	-	-	53·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,			·411 inch.
Mean Humidity, -	-	-	78·8 per cent.
Highest Temperature in Shade (on 23rd),	-		75·1°.
Lowest Temperature in Shade (on 11th),	-		46·1°.
Lowest Temperature on Grass (Radiation) (on 11th),	-	-	42·5°.
Mean Amount of Cloud, -	-	-	59·4 per cent.
Rainfall (on 12 days), -	-	-	1·650 inches.
Greatest Daily Rainfall (on 26th), -	-	-	·285 inch.
General Directions of Wind, -	-	-	W., E., N.W.

Remarks.

A very favourable month, with sufficient rainfall and of average mean temperature. The showers were equably distributed throughout the month. There was a fair amount of bright sunshine. Electrical disturbances were rife and severe in England, but only trifling in Ireland. Very heavy showers of rain and hail fell in the vicinity of Dublin on the 25th and 26th.

In Dublin the arithmetical mean temperature (61·1°) was slightly above the average (60·6°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 60·3°. In the thirty-two years ending with 1896, July was coldest in 1879 (“the cold year”) (M. T. = 57·2°). It was warmest in 1887 (M. T. = 63·7°); and in 1868 (the “warm year”) (M. T. = 63·5°). In 1896 the M. T. was 60·9°.

The mean height of the barometer was 30·003 inches, or 0·088 inch above the corrected average value for July—namely, 29·915 inches. The mercury marked 30·361 inches at 9 a.m. of the 11th, and fell to 29·601 inches at 7 a.m. of the 20th. The observed range of atmospheric pressure was, therefore, 0·760 inch.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 60·3°, or 2·8° above the value for June, 1897. Using the formula, *Mean Temp.* = *Min.*

+ (*max.*—*min.* \times .465), the value was 60.6° , or 0.4° above the average mean temperature for July, calculated in the same way, in the twenty-five years, 1865–89, inclusive (60.2°). The arithmetical mean of the maximal and minimal readings was 61.1° , compared with a twenty-five years' average of 60.6° . On the 23rd the thermometer in the screen rose to 75.1° —wind, S.W.; on the 11th the temperature fell to 46.1° —wind, E. The minimum on the grass was 42.5° , also on the 11th.

The rainfall was 1.650 inches, distributed over 12 days. The average rainfall for July in the twenty-five years, 1865–89, inclusive, was 2.420 inches, and the average number of rainy days was 17.2. The rainfall, therefore, was considerably below the average, while the rainy days were still more below it. In 1880 the rainfall in July was very large—6.087 inches on 24 days; in 1896, also, 5.474 inches fell on 18 days; and in 1895, 4.503 inches on 16 days. On the other hand, in 1870, only .539 inch was measured on 8 days; in 1869, the fall was only .739 inch on 9 days; and in 1868, only .741 inch fell on but 5 days.

High winds were noted on 9 days, but attained the force of a gale on only one occasion—the 5th. Temperature reached or exceeded 70° in the screen on 7 days. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In 1888, the maximum for July was only 68.7° .

A thunderstorm occurred on the evening of the 21st. A solar halo was seen on the 4th. Hail fell on the 6th and 26th. The atmosphere was rather foggy on the 16th, 21st, and 31st.

The weather of the period ended Saturday, the 3rd, was changeable but favourable, with northwesterly to westerly winds and unsteady temperature. On Thursday, the 1st, an anticyclone lay off the W. of Ireland, moving south-eastwards. On Friday a series of barometric depressions began to arrive off our N.W. and N. coasts, the wind backed to W. or S.W. and freshened with increasing cloudiness and some showers. The thermometer rose to 71.7° in the shade, having fallen to 52.3° during the previous night. Saturday was a dry but windy day.

The distribution of atmospheric pressure throughout the week ended Saturday, the 10th, was cyclonic in the N.W., N., and N.E., anticyclonic in France and Central Europe. Hence, unsettled weather prevailed in Ireland, Scotland, and Scandinavia, whereas it was comparatively fine in England and on the Continent. The force of the wind was considerable in Ireland and Scotland, amounting to a gale at times at exposed stations. On Sunday a

large and rather deep depression passed eastwards across Scandinavia. In its rear, strong, squally and cool northwesterly winds blew over the British Islands—the amount of cloud was large, but very little rain fell except at the exposed Irish stations of Belmullet and Malin Head. At night the wind backed to W.S.W. and freshened to gale force as a new depression approached Scotland from the Atlantic. Near the centre of this system the barometer ultimately fell almost to 29 inches (to 29·04 inches at Sumburgh Head on Tuesday evening). Very cold N.W. winds, with showers of rain and hail, set in as this disturbance moved away to the north-eastward. On Tuesday night the thermometer fell to 46° in Dublin and to 44° at Parsonstown. Thursday was a squally, wet, cold day in Ireland, but fair and bright over the greater part of England. On Friday a rapid increase of atmospheric pressure began, and on Saturday an anticyclone of considerable size covered the greater portion of the British Isles, the result being fine, quiet weather. In Dublin the mean height of the barometer was 29·921 inches, pressure ranging between 29·614 inches at 3 p.m. of Monday (wind, W.S.W.) and 30·335 inches at 9 p.m. of Saturday (wind, S.E.). The corrected mean temperature was 57·7°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 57·0°. The prevalent winds were N.W. and W. Rain fell to the amount of ·337 inch on three days, ·216 inch being measured on Thursday. A perfect solar halo appeared on Sunday afternoon.

Throughout the week ended Saturday, the 17th, the distribution of atmospheric pressure was anticyclonic in the British Islands and their immediate neighbourhood. Fair, summerlike weather was generally prevalent, and there was a large amount of bright sunshine, while scarcely any rain fell. Easterly winds prevailed until Friday, when either calms or variable westerly breezes took their place. On Sunday morning the barometer stood at 30·41 inches at Cambridge. By Monday morning the isobar of 30·4 inches had re-formed over Scandinavia, in which neighbourhood it was still found on Tuesday. At this time a shallow depression was forming over the Mediterranean, so that gradients for easterly winds became decided, especially in the S.E. of England. The low-pressure area subsequently advanced northwards across France, while a more marked depression formed over Germany. These irregularities caused thunder-rains in many parts of the Continent, but the weather remained dry in the United Kingdom until Friday, when some sultry showers fell in the south and west of Ireland. On Saturday the barometer began to fall somewhat decidedly, but the weather was very fine and warm generally. In Dublin the mean

height of the barometer was 30·134 inches, pressure varying between 30·361 inches at 9 a.m. of Sunday (wind, E.), and 29·947 inches at 9 p.m. of Wednesday (wind, also E.). The corrected mean temperature was 61·2°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 62·5°. On Saturday the shade thermometer rose to 73·9°; on Sunday it fell to 46·1°. Easterly winds prevailed, chiefly light in force. The only rainfall was ·002 inch on Friday, which, however, did not count as a "rainy day."

At the beginning of the week ended Saturday, the 24th, the weather fell into an unsettled, thundery condition owing to the formation of a large and finally complex depression over Ireland, England, the North Sea, France and Belgium. On Sunday afternoon the weather broke in the east of Ireland with a chill and the formation of dense vapour fog on the headlands along the coast. Heavy showers fell early on Monday morning in Dublin, and thunder and lightning occurred in the English Channel. On Tuesday an irregular area of low atmospheric pressure lay over Ireland, England, and Denmark. Thunderstorms had already occurred in the S. and S.E. of England, and rain fell abundantly except in the N. of England and Scotland. During Tuesday and Wednesday electrical disturbances were again prevalent in England, and a sharp thunderstorm passed over Dublin also on Wednesday evening. Earlier in the day a violent thunder and hail storm had visited the northern suburbs of London. The depressions subsequently passed on to Denmark, while northerly winds brought a spell of fine weather to the British Islands. On Friday, however, the barometer again gave way in the W., the wind backed to W. and finally to S., and the week closed with a renewal of unsettled weather. In Dublin the mean height of the barometer was 29·864 inches, pressure ranging between 29·601 inches at 7 a.m. of Tuesday (wind, E.N.E.), and 30·048 inches at 9 p.m. of Thursday (wind, W.S.W.). The mean dry bulb thermometer reading at 9 a.m. and 9 p.m. was 61·0°. The corrected mean temperature was 61·5°. On Thursday the screened thermometers fell to 54·2°, on Friday they rose to 75·1°—the highest reading so far recorded this season in Dublin. The rainfall was ·690 inch on four days, ·228 inch being measured as the result of Wednesday's thunderstorm. The prevalent wind was E.N.E.

During the week ended Saturday, the 31st, broken and showery at first, the weather subsequently became fine and warm. On Sunday morning the centre of a large, though not deep, atmospheric depression lay off the Hebrides, where the barometer read 29·50 inches compared with 30·30 inches at Corunna. Fresh S.W. winds

were blowing, accompanied by heavy showers in many districts. Thunder and lightning occurred in the course of the day in the N.E. of Ireland, the N. of Scotland, and the N.E. and centre of England. At 8 a.m. of Monday the depression was central between Caithness and the Shetlands, the barometer being down to 29·45 inches. In Ireland the wind had drawn into W. or W.N.W. Heavy showers of rain and hail fell in Dublin at intervals, while thunder and lightning were prevalent all over the centre and east of England and at Aberdeen. A steady and general rise of the barometer now set in, as an anticyclone spread north-eastwards from the Atlantic and Bay of Biscay across the British Islands. While it was forming a considerable fall of warm rain took place in Ireland on Wednesday. By Thursday evening the anticyclone had fully developed, and pressure reached 30·37 inches in the S.W. of Ireland. The last three days of the week were fine and summer-like, but much cloud was reported, and a good deal of fog hung about the coasts and over the Channels. In Dublin the mean height of the barometer was 30·046 inches, pressure ranging between 29·670 inches on Sunday afternoon (wind, W.), and 30·357 inches at 9 a.m. of Friday (wind, W.S.W.). The corrected mean temperature was 62·3°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 61·4°. On Thursday the shade thermometers rose to 71·8°, on Tuesday they fell to 53·3°. The wind was westerly (between S.W. & N.W.) for the most part. The rainfall was ·611 inch on four days, ·285 inch being measured on Monday, when also hail fell.

The rainfall in Dublin during the seven months ending July 31st amounted to 15·600 inches on 125 days, compared with 13·328 inches on 102 days in 1896, 16·785 inches on 96 days in 1895, 18·133 inches on 130 days in 1894, 11·666 inches on 92 days in 1893, 7·935 inches on 80 days in 1887, and a twenty-five years' average of 14·733 inches on 112·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in July was 1·625 inches on 10 days, compared with 5·726 inches on 16 days in 1896, 3·680 inches on 16 days in 1895, 3·805 inches on 19 days in 1894, and 1·290 inches on 15 days in 1893. Of the total rainfall ·470 inch fell on the 26th, and ·415 inch on the 25th. The total fall since January 1 has been 19·750 inches on 116 days, compared with 13·082 inches on 77 days in 1896, 17·950 inches on 83 days in 1895, 21·186 inches on 115 days in 1894, and 13·066 inches on 90 days in 1893.

At Cloneevin, Killiney, Co. Dublin, the rainfall in July was 1·28 inches on 10 days, compared with a twelve years' average of 2·554

inches on 16·3 days. On the 27th the rainfall was ·28 inch. In July, 1896, 6·72 inches fell on 20 days, in 1895 3·58 inches fell on 17 days, in 1894 4·08 inches fell on 23 days. Since January 1, 1897, 16·08 inches of rain have fallen on 123 days at this station (Cloneevin).

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 1·425 inches on 11 days, ·297 inch being measured on the 18th. At this climatological station 19·797 inches of rain have fallen on 113 days since January 1, 1897. The maximal temperature in the shade in July was 77° on the 16th, the minimum was 42·5° on the 11th. The thermometer rose to or above 70° in the screen on eleven occasions during the month.

TYPHOID BACILLI IN JOINTS.

IN the *Montreal Medical Journal*, Drs. Martin and Robertson, of the Royal Victoria Hospital, Montreal, published a case of *Suppurative Arthritis due to the Typhoid Bacillus*. About the 21st day acute inflammation attacked the right wrist-joint. Pus, withdrawn by a hypodermic syringe (with aseptic precautions), contained characteristic bacilli of enteric fever, and these only. The authors record the case "not only because of its interest in verifying the pyogenic properties of Eberth's bacillus, but also because in the fairly extensive literature at our command we were unable to discover any similar case in which a suppurative arthritis complicating typhoid fever was induced solely by the bacillus of that disease." They note, however, that Swiezynski has recorded a somewhat similar case in *Centralblatt für Bakteriologie*, of peri-articular inflammation only. "That ordinary pyogenic organisms are responsible for most of the suppurations in enteric fever has been amply demonstrated by Vincent, who further pointed out that wherever streptococci were associated with the typhoid germ the prognosis is always grave. On the other hand, the association of staphylococci could not be regarded as an unfavourable sign so far as recovery is concerned."

PNEUMONIA.

THE Surgeon-General of the United States Navy, in making his annual report, attributes the unusually low percentage of mortality from pneumonia to the uniform treatment adopted, which consisted of a hypodermic injection of $\frac{1}{30}$ to $\frac{1}{35}$ grain of sulphate of strychnin every three or four hours, together with a very free use of alcohol.—*The Hospital*.

PERISCOPE.

ERYTHROMELALGIA ASSOCIATED WITH RAYNAUD'S DISEASE.

DR. H. L. ELSNER records (*Medical News*, New York, LXX. 25) a case of erythromelalgia associated with Raynaud's disease, occurring in a woman aged thirty-eight. The illness commenced in 1893 with headaches, mainly frontal but partly occipital, associated with flushings; sometimes there was a burning sensation in the palms and backs of both hands. In 1896 pains involving the surfaces of the fingers of the right hand became paroxysmal, and were associated with a maculo-papular erythema of an evanescent character, which disappeared with the burning and with the pain. After a prolonged period of intense suffering the erythema gave way to a characteristic blueness, and the original spots of erythema became gangrenous and sloughed. After a short interval there was positive evidence of gangrene of the terminal phalanx of the heretofore erythematous thumb. The tip became cold, blue, shrivelled in appearance, and had a distinct V-shaped line of demarcation; after a process of dry gangrene, lasting a little over a month, it separated entirely, leaving the articular surface below clean and smooth. The author points out that Graves, in 1843, described a peculiar condition of the extremities associated with symptoms much like those mentioned later by Mitchell, in which he suggested that the nerves and arteries of a part independent of the heart could affect local circulation sufficiently to give rise to local symptoms of a peculiar and unique character.

TONGUE-TRACTION IN ASPHYXIA.

DR. KENNETH CAMERON reported to the Montreal Medico-Chirurgical Society a case in which he had successfully employed Laborde's method for the resuscitation of a new-born infant, after ordinary procedure had failed. "The child being placed well over on its right side, the tongue was gently seized by a pair of Kean's forceps and forcibly drawn forward, and then forcibly shoved back, as far as possible in both directions. This was kept up at the rate of about 30 or a little more per minute. Hardly half a minute had elapsed, after beginning the traction, before the child gave an inspiration, in about another half minute a second one followed; after that they became gradually more frequent and soon the child began to cry. The child has since been perfectly well."

ARMY MEDICAL STAFF.

THE following is the official list of successful candidates for Commissions in the Army Medical Staff at the examination held in London in August, 1897 :—

Order of Merit	Names	Marks	Order of Merit	Names	Marks
1.	Browne-Mason, H.		10.	Carroll, F. F.	2,176
	O. B. - -	2,933	11.	Macpherson, J.D.G.	2,139
2.	Watts, B. - -	2,713	{12.	Gwynn, W. P. -	2,129
3.	Martin, H. G. -	2,700	{13.	O'Gorman, C. J. -	2,129
4.	Penny, F. S. -	2,671	14.	Lowsley, M. M. -	2,109
5.	O'Grady, S. de C.	2,441	15.	Ross, N. H. -	1,986
6.	Gloster, T. H. -	2,377	16.	Bourke, E. A. -	1,965
7.	Berne, J. G. -	2,327	17.	Lupton, A. C. -	1,868
8.	Young, A. H. O. -	2,298	18.	Collingwood, P.H.	1,840
9.	Old, J.E. S. -	2,206	19.	Carter, G. B. -	1,800

INDIAN MEDICAL SERVICE.

THE Military Secretary, India Office, has forwarded for publication a list of the candidates for Her Majesty's Indian Medical Service who were successful at the Competitive Examination held in London on the 30th July, 1897, and following days. Thirty-three candidates competed for eighteen appointments. Thirty-two were reported qualified. The following is the official list of the successful candidates :—

Names	Marks	Names	Marks
1. Delany, T. H.	3,142	10. Tate, G. - -	2,777
2. Rait, J. W. F.	3,020	11. Chitale, P. K.	2,776
3. Douglas, S. R.	3,012	12. McPherson, G.	2,704
4. Hunt, S. -	2,966	13. Fayrer, F. D. S.	2,697
5. O'Meara, E. J.	2,937	14. Cox, W. H. -	2,678
6. Baird, R. F. -	2,889	15. Condon, de V.	2,667
7. Gage, A. T. -	2,877	16. Gidney, H. A. J.	2,648
8. Laing, G. C. -	2,854	17. Sargent, A. G.	2,606
9. Kirkpatrick, H.	2,807	18. Lethbridge, W.	2,500

ARMY MEDICAL SCHOOL, NETLEY.

ARMY MEDICAL STAFF.—The following is the official list of surgeons on probation of the Medical Staff of the British Army who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained

at Netley, and the combined numbers are accordingly shown in the list which follows :—

July 30th, 1897.

Combined Marks		Combined Marks	
^a 1. Cummins, S. L. -	4,871	8. Poe, J. -	3,942
2. McArdle, J. -	4,455	9. Norrington, H. L. W.	3,928
^b 3. Hopkins, C. H. -	4,247	10. Stallard, H. G. F. -	3,806
4. Hearn, L. J. C. -	4,227	11. Jephson, R. D. -	3,654
5. Mackessack, P. -	4,172	12. Crean, J. -	3,577
6. McCarthy, J. McD.	4,147	13. Bowen, A. W. N. -	3,413
7. Brodribb, E. -	4,085		

INDIAN MEDICAL SERVICE.—The following is the official list of surgeons on probation of the Indian Medical Service who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list which follows :—

July 30th, 1897.

Combined Marks		Combined Marks	
^c 1. Murray, J. G. P.-	5,644	5. Fenton, A. -	5,093
^d 2. Anderson, S. -	5,428	6. Dredge, J. A. -	5,006
^e 3. Hutchinson, F. H. G.	5,390	7. Knox, R. W. -	4,885
^f 4. Marjoribanks, J. L.	5,208		

The prizes were presented by Major General Sir William F. Butler, K.C.B.

HOT WATER FOR OBESITY.

WE learn from a leading article in the *Ontario Medical Journal* that a new Banting has arisen in Vancouver. He is only “a gentleman,” so that his system remains anonymous for the present. He “tilted the scales at 270 pounds,” took to drinking hot water (neat), and in about seven weeks lost 31 lbs, and “never felt better in his life.” Unfortunately for the inventor’s con-

^a Gained the de Chaumont Prize in Hygiene.

^b Gained the 2nd Montefiore Prize.

^c Gained the Herbert Prize of £20, the Martin Memorial Medal, Pathology Prize presented by Sir Joseph Fayrer, Bart., K.C.S.I.

^d Gained the Maclean Prize for Clinical and Ward Work.

^e Gained the Parke’s Memorial Medal.

^f Gained the 1st Montefiore Prize of 20 guineas and Bronze Medal.

clusion, from the logical point of view, the hot-water drinking is combined with dietetic restrictions. "He takes four pints daily of water as hot as it can be drunk. The first three pints are taken an hour and a half before each meal, and the last one half an hour before bed-time. The diet consists of lean meat at each meal, together with bread and butter *ad lib.*, and though the variety here is not great, it can be continued for weeks without much inconvenience. When the decrease in weight has reached the desired point, the food may be taken in greater variety, and if the hot water drinking is continued the poise will remain stationary. It should be stated that no fluids should be taken with the meals, and with the exception of the four pints of hot water daily all drinking is interdicted."

RIGA'S DISEASE.

THE nuisance of giving to diseases the names of their describers is growing. The latest we have observed is *la maladie de Riga*, to which M. Brun devotes a paper in *La Presse Médicale*. For its size and the size of its subjects it enjoys a disproportionate number of aliases. The author of the paper calls it "papillomatous ulceration of the frænum linguæ." Fele, who read an essay on the subject at last year's Congress in Rome, calls it *produzione sublinguale*. Other Italian physicians, including Riga himself, have given it other names. The affection is peculiar to southern parts of Italy, Campania, Calabria, and the Neapolitan district, where it is endemic. It attacks infants only. M. Brun, who reports a case observed in the Paris Children's Hospital which seems to have been identical with the Italian disease, defines it as "une excroissance végétante, saillante, des dimensions d'une pièce de vingt ou de cinquante centimes, recouverte d'un exsudat blanchâtre d'aspect diphtéroïde."

LITERARY NOTE.

THE Rebman Publishing Co., Ltd., London, and Mr. W. B. Saunders, Philadelphia, will shortly issue an entirely new work on "The Diseases of Women," written for students and practitioners by Mr. J. Bland Sutton and Dr. Arthur E. Giles. The book will be profusely illustrated with woodcuts, most of which have been drawn expressly for it.

REPertoire DE PHARMACIE.

THIS monthly journal, published in Paris, appears to have swallowed up the *Archives de Pharmacie* and the *Journal de Chimie Médicale*, and survives in its fifty-first year. In the

number before us a paper by M. Gay informs that "the honour of discovering chloroform is shared by Soubeiran in France, Liebig in Germany, and Guthrie in America," and assigns priority to Liebig, although Soubeiran's memoir was first published, and he seems to have had from the beginning the truest conception of the nature of the substance. Argon is the subject of three original communications. The number contains much varied and interesting information.

BEFORE AND AFTER THE BATH.

ACCORDING to the *Mercuredi Médical*, Max Edel, a German bacteriologist, took a bath, and then examined the water for microbes. He found it contained five billions eight hundred and fifty-million micro-organisms. After a bath of one foot only he estimated the number of microbes at one hundred and eighty millions. The question now arises—When did Dr. Edel have his previous bath?—*Med. Rec.*

GREEN HAIR.

It may be useful to fashionable Irish ladies to know that they can have green hair if they like. Dr. Oppenheimer exhibited to the Johns Hopkins Medical Society a man, aged fifty-eight, who had been for four years exposed to very fine copper oxide dust, and whose hair was a "pale but distinct green." Three or four days in copper works will cause the coloration to appear if precautions are not taken, the moustache being first affected.

GOITRE.

At the Congress of German Surgeons which met on April 17th in Berlin, Professor Kocher, of Berne, reported that in the last nine hundred cases operated on by him the method of total extirpation was wholly abandoned, and only the partial operation was performed. Since proceeding in this way he has not had any cases of cachexia strumipriva except in one instance, where the remaining part of the gland was found to be atrophied. This case was cured by the internal administration of thyroid gland. Although he was well satisfied with his results, the mortality being only twelve per cent., he hoped that the number of operations would soon be reduced, and that internal medication would be substituted. He made a very remarkable communication, describing the influence of the internal administration of thyroid extract and phosphate of potassium, and showed several photographs of patients where the reduction of the gland after the use of these internal remedies was very obvious. His address

was listened to with much interest, and caused a great sensation. Professor Mikulicz said that the internal use of thymus gland was also able to reduce the goître. Professor von Eiselsberg had not found this to be the fact in his experience.—*Med. Rec.*

CALCIUM PERMANGANATE IN DENTAL SURGERY.

As a powerful and at the same time harmless disinfectant d'Almen considers that calcium permanganate holds an important place in dental surgery, particularly as affording a means of obtaining perfect antisepsis, both before and after operation. Employed as a gargle in 2 per cent. solution, it is most serviceable after extensive operations in the buccal cavity.—*Rev. Intern. de Méd. et de Chirurg.*, vii., 319, after *L'Odontol.*

ENORMOUS DOSES OF BISMUTH SUBNITRATE.

A CASE has recently been recorded by Matthieu (*Mod. Méd.*, v., 168) of a patient suffering from hyperpepsia, who took more than two ounces of subnitrate of bismuth daily for twenty-four days. The hyperpepsia was not materially benefited, but the patient suffered no ill effects other than a slight constipation and pigmentation of the skin.

FORMALIN AS A DISINFECTANT.

TRÉTROP considers a 2 per cent. solution of formalin to be one of the best antiseptic solutions, having obtained good results with it, even in several cases where other preparations had proved inefficacious. Irrigations and dressings with this solution rapidly stop the formation of pus, keep wounds in an aseptic condition, and favour rapid healing.—*Bull. gén de Thérap.*, cxxxi., 376, after *Journ. Méd. de Brux.*

CARBOLIC ACID.

THE *Gazette Médicale de Paris* (now no longer "medicale") insists upon the danger of applying carbolic acid dressings to wounds of the fingers, and cites in illustration a case in which gangrene followed twenty-four hours after the application of a one per cent. solution to a wound of the middle finger.

HIGH TEMPERATURE.

DR. A. JACOBI, of New York, reported to the Association of American Physicians a case of his in which the temperature, taken "in mouth, axilla, popliteal space, rectum, and urethra, before many witnesses and with many thermometers," was 148° F. The man was admitted for an injury. "He took great in-

terest in his case, and always asked about the notes made from day to day, and he finally ran away from hospital, and all traces of him were lost." But the cake was taken by Dr. Welch, who mentioned the "well-known case of Galbraith, of Omaha, where the temperature is said to have gone up to 171° F. for some hours."

PHENACETIN IN TYPHOID.

HAVING treated over 200 cases of typhoid with phenacetin during the past four years, and having had only six deaths, Bigami (*Gaz. d'Osp.*) naturally concludes that the remedy is a very valuable one in this disease. The drug is given at once as soon as the disease is diagnosticated or merely suspected, in doses of 3 grammes in twenty-four hours, divided into six doses, in cachets, one being taken every four hours. Infants and old people are given from 1½ to 2½ grammes in the same period.

LA CLINICA MODERNA.

THIS Journal, which is in its third year, is published at Pisa, under the direction of Dr. G. R. Queirolo, Professor of Clinical Medicine in the University, with his assistant, Dr. Lando Landi, as editor-in-chief. Its price, ten shillings a year—still less for students—puts it within reach of all. The number before us contains two original lectures—one from the University of Siena—abstracts of the proceedings of societies (our own Royal Academy of Medicine amongst them), and numerous notices of papers in Italian, French, English, and German journals.

THE MIDDLESEX HOSPITAL JOURNAL.

WE have received the first number of this journal, which the Middlesex Hospital promises to produce five times in the year. It contains a clinical lecture on two cases of stone in the bladder, a history of the Middlesex Hospital Medical Society, the Society's Report, and information about the Rowing and the Rugby Football Clubs. On the whole, we fear the "little stranger" does not seem likely to interest the profession outside the hospital.

BACTERIUM COLI COMMUNE.

THE *Giornale della Reale Società Italiana d'Igiené* (Milan) publishes a brief account of some experimental researches on the development of this bacterium, when cultivated aerobically, by Dr. Serafini, of Naples. He found that when cultivated without access of air it loses, to a great degree, its reproductive activity; that, simultaneously, the virulence of the micro-organisms was

diminished; and that the diminution was most marked when the cultivation was carried on in gases which are always present in the intestinal tract.

FRENCH TIPPLING.

Two illustrative cases were recently published in the *Revue d'hygiène et de Police sanitaire*. One, a labouring man of 34, beginning at 3 a.m., before he started for his work, had, as a matter of routine, swallowed when he went to bed 4 litres of wine, 1 glass of rum, and 4 *absinthes*. Another, a butcher's assistant of 22, got through daily 2 litres of wine and about 15 glasses of spirits. He worked most and drank most from 3 to 8 a.m. Both these men, it is added, if questioned as to their habits would declare "qu'ils ne voient pas—ou si peu!"

FRENCH SCIENTIFIC WORKS.

MM. J. B. BAILLIÈRE ET FILS have just published a very full catalogue of French scientific books on Medicine, Natural History, Agriculture, Physics, Chemistry, and Industrial Art. One hundred and twelve octavo pages contains the titles of more than 5,000 volumes. Copies may be obtained gratis on application to 19 Rue Hautefeuille, Paris.

ST. MARY'S HOSPITAL GAZETTE.

WE have received the first number of this organ of the school attached to St. Mary's Hospital—an important metropolitan school. We note that in the Pass List of the University of London, of the twelve London medical schools, St. Mary's stands third (equally with St. Thomas's) in number of successful candidates. Guy's heads the list with 12, St. Mary's passed 8. The *Gazette* is to be published every month except August and September at an annual subscription of 5s.

SNAKEBITE IN INDIA.

AT the Indian Medical Congress Surgeon Lieut.-Col. Duke read a paper on snakebite in India, with special reference to Dr. Mueller's treatment. It is not to be expected *à priori* that the strychnin medication would be equally efficacious against all snake venoms, differing as they do in their effects on the system. However, Mr. Duke's conclusions, based on 37 cases, are, on the whole, favourable to Dr. Mueller's treatment: "the hypodermic injection of strychnine is the best, in fact the only, remedy to be relied on." Intravenous injection should be adopted when the patient is pulseless. "Though experience proves much in its favour, strychnia cannot

at this stage be considered a certain cure for the poison of all the colubrine and viperine snakes that inhabit the Indian Peninsula." He suggests that Government should supply six criminals under sentence of death for experiment.

MAMMARY TUMOURS.

PROF. RODMAN, of Louisville, concludes a paper on "Tumours of the Mammary Gland," read at the annual meeting of the American Medical Association—"Mammary cancer, submitted to operation before infection of the axillary glands, should promise 50 per cent. of cures. . . . Statistics gathered many years ago are as valueless as those made use of in estimating the mortality after amputation of the extremities. The mortality will probably be not more than 2 or 3 per cent. with the average operator. We have shown it to be less than 1 per cent. in over 600 cases operated upon by six American surgeons."

"MONTREAL MEDICAL JOURNAL."

IN July a new series of this journal began—practically a new journal. The editors and publishers propose "to maintain a high-class medical journal, in close touch with the medical faculty of M'Gill University, yet not narrowed down to the interests of that University alone—on the contrary, appealing to Canadian practitioners at large." The number opens with a paper by Assistant-Professor G. E. Armstrong on "Infection in the Dentist's Chair." The subject deserves more attention than it receives. He notices "the absence of evidence in dental offices of means of sterilising the instruments, and also noted that no attempt seemed to be made to cleanse the field of operation," and he gives cases in which diseases have been communicated by dental operations. He warns against the use of sponges. "We all know their danger, and how difficult it is to make them sterile. They are ruled out of nearly all German operating rooms. Yet dentists use them without a proper sterilisation, with hands not rendered sterile, and with the same sponge wipe the face and mouth, in fact, pack it into the spaces from which the teeth have been removed to check hæmorrhage."

"THE MEDICAL CHRONICLE."

THIS monthly journal is conducted by the professors and lecturers in the Medical Department of Owens College, Manchester, and is in the third volume of a new series. The number before us contains a short, appreciative notice of the late Professor Williamson, F.R.S.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Palatinoids of Peptonate of Iron and Sulphate of Manganese.

MESSRS. OPPENHEIMER, SON & COMPANY, of 14 Worship-street, London, E.C., have, we understand, at the request of several leading members of the medical profession, prepared palatinoids of peptonate of iron with manganese sulphate—a formula that is being very largely employed on the Continent in the treatment of anæmia, amenorrhœa, and chlorosis. As liquid preparations of this combination are liable to cause injury to the teeth and are objectionable in flavour, the palatinoids afford a means for its tasteless administration. The palatinoids, when moistened in the mouth, become slippery, and many patients, unable to take pills, ordinary gelatine capsules, or the more bulky starchy cachets, can swallow the palatinoids with ease. Each palatinoid contains one grain of peptonate of iron and the same quantity of manganese sulphate. The dose is one to three palatinoids, as directed by the physician.

Erythrol Tetranitrate.

MESSRS. BURROUGHS, WELLCOME & Co., of Snow Hill Buildings, London, E.C., have submitted for our consideration specimens of their “tabloid” brand of erythrol tetranitrate. This newly introduced drug is used, and promises to be of value, in conditions of cardiac pain with high arterial tension. In the issues of the *British Medical Journal* of April 3rd and 10th, 1897, its use as a vaso-dilator in angina pectoris and in the asthmatic attacks of chronic nephritis is recorded, and very remarkable results appear to have been obtained. In the treatment of angina pectoris it seems to have been used not to replace amyl-nitrite and trinitrin in cutting short attacks which had developed, but in preventing the onset of the attacks. The “tabloid” of erythrol tetranitrate contains $\frac{1}{2}$ gr. and is put up in bottles of 25. There are also 1 gr. tabloids in bottles of 12.

Van Houten's Pure Soluble Cocoa.

THIS well-known and popular preparation has recently been most favourably reported on by Mr. Alfred H. Allen, F.I.C., F.C.S., public analyst for the West Riding of Yorkshire and for the City of Sheffield. Mr. Allen has arrived at the opinion, from his analyses and experiments, that Van Houten's cocoa is perfectly pure, and contains no ingredient foreign to the cocoa-bean. The valuable constituents of the bean are present in a highly concentrated form, while the manner of preparation renders it capable of readily forming an emulsion, and remaining suspended in water. In the language of cocoa manufacturers therefore it is very “soluble,” and therefore eminently digestible.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

OCTOBER 1, 1897.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*On Acute Intestinal Obstruction.** By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin.

(Continued from Vol. CIII., page 305.)

IMMEDIATELY the boiled saline solution was introduced into the abdomen a great change occurred. The dusky appearance of the face in great part gave place to a malar flush, the blue lips became red, and the pulse, which could hardly be felt, became full, and by the time he was fit for removal to bed he was bathed in a warm perspiration. The tongue, which had been dark, dry, and fissured, had become moist. He soon regained consciousness, and the evening found him in a fair way to recovery. At the first dressing, six hours after operation, there was some dark-coloured discharge, and about an ounce of brown serous fluid was removed from the abdomen. The glass tube was not removed until the third day, and from that time the progress of the case was favourable, and although he went through a regular typhoid attack recovery was complete.

Acute Colitis (Cæcum almost Gangrenous.)

CASE V.—On the 9th of June, 1896, Dr. Kilbride asked me to see an urgent case with him at Athy. Mr. — gave the following history:—For a long time his breath had been foetid,

* Read before the Surgical Section of the Royal Academy of Medicine, Friday, December 11, 1896. [For the discussion on this paper, see Vol. CIII., page 245.]

and he had suffered from hiccough and occasionally vomiting. Three weeks ago, after a dinner of meat, vegetables (cabbage), and beer, he got intense colicky pains, and the abdomen became swollen and slightly tender. A castor-oil draught gave him great relief, and he went to the south for a holiday. On June 5th, after a like meal, a recurrence of these symptoms took place. The bowels could not be got to act, although calomel and castor-oil enemata with long tube and soft rubber tube had been tried. Opium allayed the pain, and when I saw him the abdomen was distended, resonant left and centre, dull along right side; not much intra-peritoneal fluid; pulse full, 84; temperature normal; face dusky; pupils somewhat contracted; rectum empty and dilated.

We decided that laparotomy was necessary. Assisted by Dr. Kilbride and Mr. Cookman, I opened the abdomen in the middle line; subcutaneous and sub-peritoneal fat enormous. The omentum, which was very fatty, I found adherent all over the right side of the abdominal wall, and to the front of the cæcum. I separated it from the abdominal wall, and then proceeded to free it from the cæcum, when a rush of foetid serum took place from the right iliac fossa. On exploring this region I found the outer side of the bowel dark purple in colour, with grey patches here and there over it. The meso-cæcum was so short that I was obliged to open the abdomen over the iliac crest. *This I did by pushing my hand well into the abdomen, and making my fingers project in the line of the intended opening. Separating the ring and middle fingers, I passed a stout scalpel through the entire thickness of the abdominal wall. A probe-pointed knife was now introduced, and the opening enlarged to the requisite extent.* The hand was now turned within the abdomen, and the semi-gangrenous cæcum pushed through the wound, where it was fixed by sutures engaging the healthy part. The patch, which showed signs of giving way, was cut off, and the bowel flushed with warm water. The patient soon rallied from the shock of operation, and made a rapid and uninterrupted recovery. He is now at business and in good health.

The method of making the secondary opening is very rapid and safe, and so deserves more than a passing mention. The delay occasioned by direct section and searching for the bowel is very pernicious, and is often the cause of a fatal termination. The hand within the abdomen easily brings to the new opening the portion of the intestine to be dealt with, after serving as

a guide to the incision, and as a protection for the underlying structures. As far as I am aware, this procedure has not been recommended heretofore.

Malignant Stricture of Colon.

CASE VI.—On June 11th, 1896, I was asked by Dr. James Little to see a case in Molesworth-street, and, with Dr. Bennett, we made a careful examination of Mr. R., aged fifty-four years, whose history was briefly as follows:—For some time he had suffered from attacks of diarrhoea alternating with constipation, the latter accompanied with left-side pain. For some weeks purgatives, and even enemata, failed to give him complete relief. He had been sent from the country to be under Dr. Little's care, and as enemata, carefully administered, failed to relieve him—the abdomen becoming tense and tender, and the pain paroxysmal—he promptly decided that surgical interference was necessary. The bowels had not been moved thoroughly for more than a week, and there was great tympanites, except at the left loin and inguinal region, which was dull. We had Mr. R. removed to 67 Leeson-street, and prepared for operation. Assisted by Dr. Bennett, and in presence of Dr. James Little, I opened the abdomen in the middle line, and allowed some brownish serum to escape. Then I passed my hand into the left iliac fossa, as we suspected sigmoid trouble. I found that piece of intestine distended and bulging towards middle line, and on exposing it we saw that it was dark in colour and tense. Following it downwards I reached a hard, unyielding mass at the edge of the true pelvis, and extending somewhat downwards. In the exhausted condition of the patient we considered it better to relieve the obstruction at once rather than carry out a resection, and so passing my hand over the sigmoid, and making it project above the crest of the ilium, I cut down, and as in Case V. used the hand within to bring the distended sigmoid into the secondary wound, where I secured it with many sutures *to the skin*. Suture of the central incision, free opening of the bowel, and flushing with boiled water, completed the operation. For some days we had some anxious moments about the case, but from the eighth day things went on favourably, and within a few weeks the patient was about in excellent health, which he still enjoys.

Dr. Bennett, to whose diagnostic skill this patient owes so much, rendered me very valuable aid in carrying out a rapid and successful operation.

Large Enterolith.

CASE VII.—Mrs. —, aged fifty-six years, came under my care on Sunday, January 10th, 1896:—

History.—For over three years she has had frequent attacks of abdominal pain, sometimes lasting a few days, accompanied by vomiting. Free purgation relieved her as a rule, but about Christmas, 1895, she was confined to bed and passed through a very critical time, very severe pain being felt below the 8th, 9th, and 10th costal cartilages on the right side. Since that time she has had repeated attacks of pain in the same region, always attended by distressing vomiting, which increased the pain.

On Wednesday, Jan. 6th, 1896, she felt as if one of the old attacks was coming on, and took some medicine. On Thursday the pain became intense, and she sent for Dr. Crinion, to whose kindness I am indebted for the following note of the case:—

Present Condition.—Vomiting of dark, foul-smelling fluid continued, causing great distress; her pulse was very easily compressed, 120 per minute; temperature, 99·5°. Face flushed and anxious-looking; tongue brown and furred; abdomen distended and tympanic. An area of dulness, as marked in the accompanying diagram, existed to the right of the umbilicus, and both loins were dull, but cleared by placing the patient on her side. Rectal examination showed the pelvis filled with coils of small intestine, pressure on which elicited no evidence of pain. There were large, dusky patches over the abdomen, which was not tender on pressure. No coils of intestine could be felt through the abdominal wall; liver and splenic dulness present. Very little urine had been excreted for hours, and the patient was fast approaching a condition of collapse.

I determined on exploring the abdomen at once, and had the parts rendered aseptic and covered with a large corrosive sublimate dressing.

Very little ether was necessary to produce anæsthesia. Scrubbing the skin with ether, then sopping well with 1–500 corrosive sublimate solution, I made an incision four inches in length between the umbilicus and pubes, inserted my hand, and explored the cæcum and colon. Then pushing the great omentum upwards, I dipped my hand well into the centre of the pelvis to turn out the small intestine, when I came upon a hard mass, which I brought out through the wound and found to be contained within the small bowel, about 16 inches from the ileo-cæcal valve. The part of intestine above the mass was dilated and smooth; below it was

rugose and contracted—almost like a tape so flattened did it appear. I tried to pass the mass downwards towards large intestine, but failed to move it in the least. On examining more closely the part of the bowel engaged, I observed two dark spots—one near the mesentery, and the other on the convex side of the gut. There were patches of recent lymph on the bowel and mesentery here, and a port-wine-coloured serum welled up from the pelvis. During these manipulations, fearing that already ulceration had occurred on the mucous surface of the bowel, I desisted from further attempts at pushing the mass downwards, and wishing to cut through sound tissue in carrying out entero-lithotomy, I pushed the mass upwards. It readily moved in this direction, and when it reached healthy tissue I made an incision an inch in length in the long axis of the bowel, and exactly opposite the mesentery. Through this wound I readily extracted the calculus here shown (Fig. 1). The reason



Fig. 1.

it would not pass down was seen at once. The sharp crystalline projections surrounding the thicker end were caught in the mucous membrane, and exciting spasm effectually barred further downward progress. A line of sero-muscular sutures closed the wound of the intestine, which was constantly irrigated with saline solution at a temperature of 100° F. during the operation. Removing the clamps I irrigated the gut for about 10 inches above the wound with saline solution at a temperature of 102° F. This excited peristalsis, and soon the contracted bowel below distended, and gas could be heard passing downwards. The intestines were now

7 days after operation, when the temperature rose to 100.4° . Although the bowels had acted freely, I ordered 5 grs. of calomel. This caused a copious evacuation, and some hours after the temperature became again normal, and so continued during the remaining days in hospital. This patient left hospital on the tenth day after operation, and she is now in perfect health.

Enormously Distended Gall Bladder, containing 450 Calculi, causing Obstruction.

CASE VIII.—This patient came to St. Vincent's with a note from Dr. Ninian Falkiner, to whom I am indebted for a memo. of the case, and to whose kindness and promptitude this patient owes her life. This patient was admitted late on the night of Feb. 16th, 1896. My assistant, Dr. Kennedy, who examined the case, made the following note:—For some years she has had, on and off, attacks of abdominal pain, which usually passed away after purgation. Five days ago this pain set in, but this time the old remedy, magnesium sulphate, failed to relieve the bowels, as did enemata; the pain became more violent, and as it increased it became paroxysmal. From being a girdle pain, it became more marked under the right costal arch, and down to the umbilicus; the abdomen meantime became distended and tense, and over the right side extremely tender on pressure. This condition continued, and Dr. Falkiner ordered her to hospital.

The chief points I noted in this case were jaundice, clammy perspiration, small, quick pulse, paroxysmal pain, and a history of constipation. *Added to this there was marked rigidity of the rectus abdominis on the right side.*

The significance of this rigidity is not sufficiently commented on in most papers on this subject. Whenever I have noted unilateral and continuous spasm of the rectus I have found, on opening the abdomen, either of three conditions—abscess of the liver, hydatid of the liver, or distended and inflamed gall-bladder.

There was no time to be lost, so I immediately opened the abdomen in the right semilunar line, the incision being 4 inches in length. On getting through the peritoneum I found the edge of the liver as low as the umbilicus; the abdominal wall was very vascular, and so also were all the organs inspected. On turning up the edge of the liver I found the gall-bladder enormously distended, and reaching downwards to the level of the crest of the ilium. It was adherent to the abdominal wall. The colon and the great omentum surrounded it, being closely adherent. With some difficulty I freed the gall-bladder so as to bring it well into the

wound, where I held it with forceps. It was evidently full of calculi, and so I opened it freely and flushed it out with warm boracic solution, removing with forceps 450 stones of various sizes. I now, owing to its great size, and the inflammatory condition present, fixed the gall-bladder to the abdominal wall, leaving a large opening to favour drainage and irrigation. Owing to the size of the liver and the displacement of the gall-bladder downwards, I was obliged to fix that viscus at the level of the umbilicus.

The course of this case ~~was~~ uneventful; recovery was uninterrupted. Of course, for some weeks there was a biliary fistula, but soon the motions from the bowel became stained with bile, and the external wound healed soundly.

In each of these cases, and indeed in every case of acute obstruction I have operated on, I found fluid in considerable quantity in the abdomen. Now, the removal of this fluid is of great importance, since in all cases where from obstruction the bowel becomes crowded with micro-organisms there is great danger of the *Bacterium coli commune* reaching any accumulation of nutrient material, such as the effusions which occur in the abdomen, and I have seen death result from septic absorption even when an attack of obstruction has at last yielded to enemata. This recalls to my mind the danger attendant on the reduction of a strangulated hernia in old people when the gut has been constricted for any length of time. Have we not all observed that in many of these cases six to ten or twelve hours after reduction collapse occurs, and before twenty-four hours death ensues, unless the abdomen be opened and well flushed with some aseptic fluid, such as boiled soda solution. Now in these cases in which such procedure has not been permitted I have found the abdomen after death to contain serous fluid in considerable quantity and very foetid. My reading of these phenomena is this—the strangulation has excited a peritonitis ascending along the intra-abdominal part of the gut, but here, owing to the blood supply being perfect, the wall of the intestine resists the passage of microbes, and so the fluid poured out is uninfected. Not so with the protruded portion. Here the vessels become engorged, intra-mural exudation occurs, the vitality is lowered, the micro-organisms are now free to invade the coats of the bowel, and multiplying rapidly soon

reach the serous coat, and through it the nutrient serum which surrounds it. Now once the bowel has reached this stage, which is often much hastened by taxis, there is grave danger in reducing the bowel without direct examination, not that strangulation continues, but because the infected fluid contents of the hernial sac are projected into a peritoneum full of a nutrient medium in which rapid multiplication goes on, and from which rapid absorption may be expected, and if the vitality be low, owing to age or debility, a rapidly fatal result occurs.

The next point worth noting in most cases of intestinal obstruction is the tendency of the bowel to remain distended, even after the obstruction has been relieved. This I have observed in twenty-seven cases arising from various causes, in all of which I opened the abdomen. I would not call attention to this were it not that I think many failures after laparotomy result from a want of appreciation of the danger attendant on closing the abdomen without exciting peristalsis. Exposure to air often excites contraction of the bowels. When this fails, irrigating them with saline solution generally suffices, but where this has failed I have, before closing the abdomen, washed out the stomach with warm boracic solution, and I have got my assistant to pass a tube well up into the colon, the end being directed by the hand in the abdomen. A siphon is now employed to introduce some quarts of boiled water at a temperature of 100° F. This rarely fails to excite peristalsis. The rectal tube is retained until flatus and fluid escape. Often this will be found useful when, owing to distension, it is difficult to return the intestines into the abdomen.

A third point of importance in the treatment, after removing the obstruction, is to adopt measures to ensure as far as possible intestinal asepsis. When the bowel has not been incised 3 to 5 grains of calomel should be given twenty-four or thirty-six hours after operation, and where there has been stercoral vomiting the stomach should from the start be washed out every sixth hour with warm boracic solution, or boiled water containing a few drops of iodine tincture.

Calomel is the best intestinal disinfectant. Under its influence the fœtor of discharges soon disappears, and the

ashen look of ptomain sickness gives way to a reaction which precedes the recurrence of normal health.

Nothing tends to bring one to a proper understanding of this subject more than a study of the causes of death in these cases—(1) When the obstruction is unrelieved, and (2) where operation has failed although the bowels have been evacuated.

Old writers, and even men of our own time, have done much to fog our knowledge of this subject—the former, through ignorance of the methods of examination; the latter, either from ignorance or from a desire to obscure the traces of unsurgical procedures. It only serves to retard progress when men wittingly or otherwise cover failure or ignorance by adopting and appearing satisfied with announcing a prominent symptom as the cause of death. What can be more absurd than to say that a patient who has been bled white has died from collapse? Is this condition not the outcome of a copious hæmorrhage which has been the real cause of death? Again, a patient's intestines have been returned into the abdomen chilled by lengthened exposure, without restoring their circulation. The patient weakened by continuous vomiting before operation never really rallies, because intestinal absorption is absent, and death is said to be due to exhaustion instead of to surgical misadventure. At times we hear that death has occurred on the third or fourth day after laparotomy, and because the temperature was normal for forty-eight hours after operation the procedure is robbed of discredit by using the word inanition instead of sepsis. In a fourth instance, where a plastic operation has been carried out, the patient has remained well until the time when catgut becomes absorbed, silk detached or bobbins loosened; suddenly the quiet of returning health gives way to the nightmare of impending disaster, an incompetent nurse gets irritable because she cannot control the tiring restlessness of her patient, and only when she sees the clammy sweat, and notes the erratic temperature that precedes death, does she realise that the patient is beyond the reach of all things earthly.

In all seriousness, we hear that secondary collapse is the cause of this misfortune. Who that has studied the writings of Madelung, of Billroth, of Czerny, or, indeed, of a host

of modern writers, can fail to recognise in these cases examples of perforative peritonitis, arising, as Madelung has clearly shown, from faulty suture material, or imperfect application of one or other of the many appliances used for securing continuity of the bowel?

When will Surgery be freed from the incubus of ancient and misleading expressions, and brought up in some degree to the level of the exact sciences?

We desire to stand between our patients and death, but so long as we delude ourselves by using terms which convey no meaning to the minds of truthful and intelligent observers how can we hope to be of service in hours of great need, when exact knowledge and prompt action indicated thereby can alone point out the road to victory? We must always remember that, however brilliant a surgical procedure may appear, the completeness of its success should be the only measure of its beauty. We are marching onwards to a position grander than the world has ever seen, more brilliant than our predecessors ever contemplated. Are we to lapse again into the benighted condition which preceded our recent awakening? Are we to go back to the salves and syrups, the cordials and clysters of the past, or are we to trust to our own vigorous minds, strong hearts, and trained hands? Is this march to victory to be checked because a few of the rank and file cry "Halt!" No; triumph is the just reward of those who, having "Excelsior" for their motto, do all things to deserve success, and press always onwards. To those who would cry "Halt!" in our march we say, "Fall out!" The ranks close up, and, when the spoils of victory come to be counted, they get but the straggler's share.

CONCLUSIONS.

Should there be difficulty in finding the site of the obstruction:—

- (a) Follow engorged coil of intestines upwards and downwards until point of obstruction is reached or turn out all the intestines.
- (b) Remove all fluid from Douglas' pouch and loins by irrigation with sterile water.
- (c) Restore colour of bowel, and establish peristaltic move-

ments by heating with neutral saline solution. The removal of the primary cause of intestinal obstruction is not always followed by relief of the symptoms.

- (d) Should there be difficulty in returning intestines, elevate pelvis in Trendelenburg's position, or, if necessary, open and wash out.
- (e) Before all, and above all these conclusions, I would lay down this rule, or formulate this axiom:—"When a surgeon is called to a case of complete obstruction of the bowel, with evidence of peritoneal effusion, it is his duty to operate at once."

ART. XIII.—*Infantile Mortality in Ireland.* By PATRICK LETTERS, M.D.; Diplömte in State Medicine; Fellow of the Royal Academy of Medicine in Ireland; Fellow of the Royal Institute of Public Health.

IF there be one feature more notable than another in the every-day health reports we see published, it is the very general omission to include the rate of infantile mortality. Death-rates for the entire populations of our large towns are regularly recorded in the leading newspapers, great attention is given to the zymotic death-rate, and to that of the various zymotic diseases individually, as affecting these large towns, meteorological observations are carefully chronicled, but the rate at which our infantile populations perish is rarely stated. It is not easy to account satisfactorily for this omission. Infantile deaths, even in the smallest communities, cannot be regarded indifferently—in large centres of population they possess supreme interest, and in the country at large they are, or should be, events of national concern, demanding our most careful investigation. A good idea of the importance of the subject may be formed from the numbers of infants under the age of one year who die all over Ireland in the course of a single year, and by noting their proportion to the total deaths. During the year 1896 there died in Ireland 76,035 persons, of whom no fewer than 10,195 were children under the age of one year. The infantile mortality, therefore, amounts to 13·4 per cent. of the general mortality, a proportion quite ample to invest the subject with all the

interest and importance claimed for it. It may be advanced by some that these early deaths, numerous though they be, have not equal interest with deaths occurring during the productive periods of adult life, that they are largely unavoidable, and that the history of all times and places proves that infants have died at an immensely greater rate than older children or adults up to the point of extreme old age. This contention carries some force, but as an argument it must not be accepted without considerable qualification. It is admitted that we do not hope to reduce the infantile death-rate below a figure that will always be high relatively to death-rates at most other ages. This, however, does not touch the point that infantile death-rates are reducible, nor that the causes which operate in their production are entirely beyond our control. If we can trace a connection between death-causes and death-rates, and if the causes are in part removable, the deaths should be, in corresponding measure, preventable. The reduction of the infantile death-rate is, therefore, on the assumption made, an eminently practical question, and at the same time one upon which too little attention has been centred. By the infantile death-rate is ordinarily understood the proportion of deaths of infants under one year of age to births registered during the same period over which the deaths occur, and is expressed as so many per thousand births. This is the sense in which I shall use the term. If the infantile death-rate were measured after the manner of the general death-rate, by stating it as a proportion per thousand of all the children living under the age of one year, the result would be less accurate, on account of the uncertainty existing as to the exact numbers of children alive in any locality under the age of one year. Registration of births is now so universally complied with, that this official record has, by common consent, been taken as the standard whereby infantile mortality may be estimated with the nearest approach to absolute accuracy. Thus measured, infantile death-rates are more reliable for statistical comparisons than general death-rates are. In comparing the infantile mortality of one city with another, or of one county with another, we do not concern ourselves with any of those corrections which are almost always necessary to be

made when the general death-rate of one place is brought into critical comparison with that of another. Population is a varying factor everywhere—in one locality we may have a preponderance of the aged, amongst whom the mortality is high; in another we may have an excess of middle-aged persons, amongst whom the mortality is low. Two such places cannot be compared without correction, if the general death-rate is to be accurately judged between them; but these two same places can be brought into perfectly fair comparison as regards their infantile death-rates, because we measure this, not by the varying standard of population, but by the fixed value of registered births. As a further illustration of the reliability of the infantile death-rate, let us take a suppositious case. Dublin is found to record an infantile death-rate of 154—i.e., 154 infants under the age of one year die to every thousand births registered. An English city of the same size as Dublin records 175. From this statement we correctly conclude that infant life is considerably more secure in Dublin than in the English city compared with it. Let us now suppose that the general death-rate in Dublin stands at 25 per thousand of its population, and that the English city records only 18, does this prove that Dublin is the more unhealthy city of the two? Not necessarily, unless the two places compared have an identical age and sex-distribution of their respective populations, and unless the English city is on a par with Dublin in the matter of public institutions and hospitals. As nearly one-half of all infantile deaths occur within the first three months of life, and as children under one year of age do not die in hospitals, it is clear that the infantile death-rates of different localities can be brought into reliable comparison without any corrections. It should be remembered also that migration does not enter to disturb the reliability of infantile rates, as it may with general rates. The quarterly returns issued by the Irish Registrar-General do not give infantile mortality-rates, except for the whole country, but from the numbers of births and deaths under one year of age recorded in the various cities and counties, the rates are determined by easy calculation. The basis of all the calculations worked out is, therefore, the four quarterly returns of the Irish Registrar-General for the

year 1896. By summation of these returns it is found that 107,900 children were born in Ireland in 1896. As already stated, the deaths under one year of age amounted to 10,195, the infantile mortality-rate of all Ireland in 1896 was, therefore, 94. At this stage I would like to introduce a comparison with all England and Wales. The English Registrar-General's Annual Report for 1896 is not yet available, but as rates for an entire country do not vary materially from year to year, the figure for 1895 will serve my purpose sufficiently. The infantile death-rate of England for 1895 was 161. This means that for every 100 infantile deaths in England there are, proportionately, only 58 in Ireland, and therefore, broadly, we are justified when we say that infant life is nearly twice as safe in Ireland as it is in England. The infantile death-rate of England is also steadily increasing, for, in the ten years preceding 1895, the mean rate was only 146. It would be interesting to know whether the Irish rate is increasing. The Irish Registrar-General's returns in past years would supply the data for this inquiry, should anyone be industrious enough to work it out. Looking to general death-rates, Ireland in 1896 shows 16·7, England same year gives 16·9. Here again the advantage rests with Ireland, although to a far less extent than in the case of infantile mortality. Death-rate all over Ireland is to death-rate all over England in the proportion of 98·8 to 100.

Returning to the Irish infantile death-rate of 94, the question for solution is, whether 94 is an absolutely high or low figure, having regard to the social circumstances, and to the industrial and agricultural pursuits of the Irish people. To solve this point a good deal of analytical work must be undertaken. We must find out in what particular localities high rates and low rates are distributed, and, to eliminate error from our calculations, we must be careful to deal with sufficiently large areas. Separately, large and smaller urban districts should be examined, and large rural areas throughout the country should be inquired into, precautions being observed against error from paucity of data.

The subjoined table is drawn up to show provincial rates:—

Infantile Mortality Rates in the Irish Provinces.

—		Population in 1891	Births in 1896	Deaths under 1 year in 1896	Infantile Death-Rate
Leinster	-	1,187,760	27,640	3,051	110
Munster	-	1,172,402	25,443	2,204	87
Ulster	-	1,619,814	39,802	3,876	97
Connaught	-	724,774	15,015	1,064	71

This table is conclusive on the following points—(1) That infant life is much more secure in Connaught than in any of the other large divisions of Ireland; (2) that children born in Leinster have a distinctly smaller chance of surviving one year than in the other provinces; (3) that infantile death-rates are not governed by population; (4) that the Connaught and Munster rates are 23 and 7 respectively below the general Irish infantile mortality-rate; (5) that the Ulster rate is 3 above, and the Leinster rate 16 above all Ireland. The next most necessary table for my purpose, if not the most important of all, is that showing the infantile mortality in the large urban districts. Fifteen of these are found to have populations over 10,000. Their combined population almost reaches 900,000. In the subjoined table they are arranged in the order of their populations.

Infantile Death-Rates in the Fifteen Large Urban Districts.

Dublin	-	-	154	Dundalk	-	-	62
Belfast	-	-	148	Lisburn	-	-	121
Cork	-	-	107	Drogheda	-	-	127
Limerick	-	-	102	Wexford	-	-	125
Londonderry	-	-	123	Lurgan	-	-	89
Waterford	-	-	162	Kilkenny	-	-	97
Galway	-	-	108	Sligo	-	-	96
Newry	-	-	146	The fifteen Districts collectively			140

The collective death-rate, it should be noted, has been calculated, not by averaging the fifteen rates, but by taking the combined births and infantile deaths, and working out the proportion per thousand births in the ordinary way. The average of the fifteen rates would give only 117, a figure which would quite understate the collective death-rate of these districts. The chief points to note in this table are— (1) that the collective rate is almost double the rate for the province of Connaught, or about one and a half times the rate for all Ireland; (2) that, although the larger centres show high rates generally, and the smaller districts low rates, there is no uniform ratio between population and rate; (3) that Waterford, a district with a population scarcely over 20,000, is the most unsafe locality in Ireland for infant life; (4) that Dublin, Belfast, and Newry show rates much in excess of the remaining districts; (5) that Dundalk is the safest large urban district in Ireland for infant life; (6) that all the other districts, Lurgan alone excepted, show rates which are, for the most part, considerably in excess of the rate for all Ireland. It is a well-established fact in vital statistics that density of population exerts a deleterious influence on health, and affects the mortality figures in most of our large urban communities very decidedly. It is also settled that this influence of increased aggregation of population tells more heavily on the death-rates of the young than of the old. If these fifteen urban districts be arranged in the order of their densities of population upon their respective areas they will come in the following order:—Belfast, Waterford, Cork, Drogheda, Wexford, Newry, Limerick, Londonderry, Dublin, Lurgan, Kilkenny, Lisburn, Dundalk, Sligo and Galway. The difference between Belfast and Galway in respect of density is very considerable, the former urban sanitary district having 43·6 persons to an acre, and the latter only 2·6. The density in Waterford is 39·1, and doubtless is one of the contributory forces determining the high infantile mortality in that city. The density over the whole of the Dublin registration district is only 14·1 persons to the acre, but doubtless there are localities within the district as densely peopled as

Belfast, alongside of others having a low density. In a mixed community like Dublin, the causes of infantile mortality in constant operation must be legion; and if density alone is less conspicuous than in Belfast, other agencies, such as artificial feeding amongst the infants of the better classes, no doubt add largely to the gross infantile mortality. The neighbouring towns of Drogheda and Dundalk show very differently in their infantile death-rates. Might some explanation of the difference be found to lie in the fact that Drogheda district has 26·2 persons to an acre, while Dundalk has only 9? In other places density does not correspond with mortality, showing the operation of other factors. Galway has a low density with a rather high mortality. Newry has a heavy mortality with moderate density, and Sligo shows a very low density with only a comparatively low mortality. Passing now from the fifteen large urban districts, we find there are still fifty districts in Ireland, which, under the Public Health Act, have urban powers conferred upon them, and are designated urban sanitary districts. In order to get at the entire urban mortality, these fifty districts must be considered. For the purpose of investigating infantile mortality, I have divided these urban districts into two lots of twenty-eight and twenty-two. The class of twenty-eight contains all those urban districts having populations over 4,000 but under 10,000—the class of twenty-two contains all the urban districts in Ireland under 4,000. Although I have worked out the infantile mortality-rates of each of these fifty towns individually, my observations, in the main, will apply to their collective rates only, except in special districts where unusual figures have been found.

The births registered in the twenty-eight intermediate towns in 1896 were 4,840, and the deaths under one year of age were 509. The infantile death-rate is, therefore, 105. The twenty-two small towns gave 1,501 births, and 133 deaths, thus showing a collective death-rate of 89. In the whole sixty-five urban sanitary districts of Ireland, 35,407 births were registered in 1896, and 4,720 infantile deaths occurred. This is equivalent to a collective urban infantile death-rate, for all Ireland, of 133. Putting the urban rates into tabular form, we have—

Collective Infantile Death-rate—

In the fifteen large towns,	140
In the twenty-eight intermediate towns,	105
In the twenty-two small towns,	89
In all the urban districts of Ireland,	133

The points established here are—(1) That infantile death-rates in the large urban districts greatly exceed the general and provincial rates; (2) that the intermediate towns also exceed the general and provincial rates, excluding Leinster, with which province they are almost on a par; (3) that infant life is greatly more secure in the moderately-sized towns than in the large towns, and also distinctly safer in the small towns than the intermediate; (4) that urbanisation in Ireland, as elsewhere, constitutes a serious danger to child life. In looking over the list of intermediate towns, a few places show exceptionally high rates. Kinsale heads the list with the remarkable infantile death-rate of 224 for the entire year. It is found, however, that the first quarter of the year was mainly responsible for this excessive rate. In that quarter infants died in Kinsale at the extraordinary rate of 450 per thousand births registered. During the second quarter of the year the rate fell to 107, in the third quarter it rose to 240, and fell again in the fourth quarter to 160. Altogether Kinsale seems a dangerous spot for child life. Kilrush gave a rate of 174 for the year, but this was mainly due to excessive mortality in the third quarter, when the children were dying at the rate of 400 per 1,000 births registered. It is satisfactory to note that this fearful rate was not maintained throughout the year, for the first quarter gave a rate of 44 only, the second quarter 121, and the fourth 67. While Kilrush may be regarded with distrust as a place of safety for young lives, it should be remembered that absolute conclusions cannot be drawn from so small a district. The rate for the third quarter in Kilrush is certainly remarkable, but statistically it merely indicates a small urban possibility, nothing more. Carrick-on-Suir shows an annual rate of 160, and Dungarvan 154. Taking the proximity of Waterford city into consideration, it would seem that these south-eastern towns are decidedly unfavourable to child life.

Amongst the towns showing a remarkably low rate Banbridge is conspicuous with the singularly low rate of 36 for the year. It would not be safe, however, to reason from this that Banbridge will always be found the happy spot it was in 1896. The low rate is simply due to the accident that, for nine months out of the year, only one death of a child under one year of age occurred in Banbridge. No conclusion can be drawn from the low infantile death-rate of Banbridge in 1896, but the interesting fact is worth recording. Out of the list of twenty-eight intermediate towns, the following show high rates:—Bray, 135; Clonmel, 132; Thurles, 128; Enniskillen, 130; Athlone, 124; and Ballinasloe, 133. It is also found that there are only nine towns having rates below the general rate for Ireland. These are Enniscorthy, Ennis, Fermoy, Queenstown, Youghal, Ballymena, Banbridge, Carrickfergus, and Coleraine. Turning to the list of twenty-two towns under 4,000, these places are too small individually to yield any general deductions. Collectively, however, they have some value for statistical purposes, and this conclusion seems warranted—that small urban districts are distinctly more favourable to infantile life than larger places. Amongst these small towns, Templemore heads the list with a mortality figure of 167. Clonakilty comes second with 155, and Belturbet third with 138. The lowest rates were found in Granard (42), Wicklow (60), Bangor (64), Warrenpoint and Clones (each 65).

Before proceeding to localise the infantile death-rates of whole counties, and the rural parts of counties exclusively, it might serve some useful purpose, at this stage, to see if the general death-rate and the zymotic death-rate, in the large urban districts, bear any uniform ratio to the infantile rate. The object of the comparison is simply to throw all the light possible on the infantile rate, in order that its incidence may become thoroughly understood, and its influence perhaps better judged. Both rates, general and zymotic, are stated in the usual way as rates *per mille* of the population. The responsibility for the accuracy of the figures rests with myself, but they have been very carefully worked out from the four quarterly returns of the Irish Registrar-General for 1896.

General and Zymotic Death-Rates in the Fifteen Large Urban Districts.

—	General Rate	Zymotic Rate	—	General Rate	Zymotic Rate
Dublin -	24·0	2·3	Dundalk -	14·4	0·7
Belfast -	24·6	3·6	Lisburn -	17·6	1·0
Cork -	22·2	1·2	Drogheda -	17·0	0·5
Limerick -	19·7	0·8	Wexford -	16·8	0·5
Londonderry -	22·7	4·1	Lurgan -	18·1	1·8
Waterford -	23·1	2·4	Kilkenny -	19·3	1·1
Galway -	20·3	0·9	Sligo -	21·4	1·3
Newry -	23·0	1·7			

The noteworthy points in this table are:—(1) That Belfast exceeds Dublin sensibly in its general, and very materially in its zymotic mortality; (2) that, next to Belfast and Dublin, the highest general rates are found in the order of Waterford, Newry, and Londonderry; (3) that Dundalk is by far the healthiest urban district in Ireland; (4) that the three districts showing the heaviest zymotic rates in 1896 were, in order, Londonderry, Belfast, and Waterford; (5) that the three having the lowest rates were, in the order of their lowness, Drogheda, Wexford, and Dundalk. Referring to the value of the zymotic rate as a sanitary test, we should know how it has been caused, and over what period a high or a low rate has extended. Londonderry, although fifth amongst our large urban centres in the order of its population, and also fifth in the order of its general death-rate, should not normally be first in the order of zymotic rate, nor will it be found in that unenviable position, I feel assured, if its records for a series of years be examined. From the detailed figures before me, it is quite clear that Londonderry suffered from a severe epidemic of some kind, most probably measles, during the second and third quarters of the year. The quarterly zymotic rates for Londonderry in 1896 were, in order, 2·0, 7·3, 4·3, and 2·7. It is quite reasonable to infer, from the uniformity of the quarterly

rates throughout the year recorded in Belfast, Dublin, Waterford, and the other large towns, that these do not depart very much from the normal rates always existing in these places. Returning to the infantile mortality of the fifteen large urban districts, we should observe that Dublin, although somewhat healthier than Belfast, is decidedly more unfavourable to child life. Waterford comes out to serious disadvantage in both respects, with this peculiarity, that the insecurity of infant life there is a far more pronounced feature of its insalubrity than its high general death-rate. Dundalk stands well in all respects, proving not only good sanitation, but the existence of such elements as favourably influence child life. Drogheda is by no means an unhealthy town—its zymotic death-rate in 1896 was absolutely the lowest of the fifteen urban districts, yet child life perishes in it at double the rate it does in the neighbouring town of Dundalk. In most of the other districts it is impossible to trace a uniform connection between the infantile and the general or the zymotic rate. This leads up to the conclusion that infantile deaths are not largely caused by the same agencies that destroy adult life, and that zymotic diseases have next to no share in their production. I shall supply proof of this assertion before concluding; and meanwhile, let us examine the distribution of infantile mortality in the counties. In dealing with this part of my subject, it appeared to me that no investigation would be satisfactory which was not based upon the infantile mortality of both the urban, or rather the combined urban, and the rural parts of each county, separately stated. It has been pointed out that there are sixty-five urban sanitary districts in Ireland. These are scattered, here and there, somewhat irregularly throughout twenty-six counties. The remaining six counties have no urban districts, and hence, in these cases, the general county rate and the rural county rate are identical. The six entirely rural counties are Kildare, Queen's county, Tyrone, Leitrim, Mayo, and Roscommon. The following table has been prepared to show in the first column of figures the infantile mortality-rate of each entire county, in the second the collective rate of the combined urban districts in each county, and in the third column the rural county rate only:—

Infantile Death-Rates in the Counties.

—	Entire County Rate	Urban County Rate	Rural County Rate	—	Entire County Rate	Urban County Rate	Rural County Rate
Carlow -	73	96	66	Tipperary -	81	135	68
Dublin -	148	153	108	Waterford -	114	161	89
Kildare -	86	—	86	Antrim -	124	147	79
Kilkenny -	94	97	93	Armagh -	84	100	78
King's Co. -	77	111	74	Cavan -	67	113	66
Longford -	63	42	64	Donegal -	68	133	67
Louth -	76	92	61	Down -	98	114	81
Meath -	76	99	71	Fermanagh -	68	130	61
Queen's Co. -	72	—	72	Londonderry	97	118	85
Westmeath -	86	124	80	Monaghan -	71	67	78
Wexford -	83	106	75	Tyrone -	76	—	76
Wicklow -	79	60	81	Galway -	68	113	63
Clare -	68	132	61	Leitrim -	69	—	69
Cork -	94	109	88	Mayo -	75	—	75
Kerry -	69	99	65	Roscommon -	62	—	62
Limerick -	90	102	84	Sligo -	80	97	78

A glance up and down these columns shows what might be expected—that urban rates generally exceed entire county rates, and that these again are higher than the rural county rates. The exceptions to this rule, neglecting the six non-urban counties mentioned, are Longford, in which the figures are all in reversed order, and also Wicklow and Monaghan, where the same peculiarity is observed. If the entire county rate column be examined, it is found that Dublin easily holds first place as a fatal locality for infants, Antrim comes second, Waterford third, Down fourth, Londonderry fifth. These counties all exceed the general rate for Ireland. Two counties, Kilkenny and Cork, record the same rate as

the country generally. The remaining twenty-five counties show rates below that of Ireland. The lowest whole-county rate is found in Roscommon, and the only other counties with rates under 70 are Longford, Clare, Kerry, Cavan, Donegal, Fermanagh, Galway, and Leitrim.

The urban county rate column discloses the fact that the combined urban districts in county Waterford, or, in other words, that Waterford city and Dungarvan are clearly the most dangerous spots in Ireland for infant life. We have already seen the rate in Waterford urban district to be 162. Dungarvan alone has an infantile death-rate of 154, the two combined work out to 161. Next to the urban parts of Waterford, the collective urban rates of the following counties, in order, show the highest—Dublin, Antrim, Tipperary, Donegal, Clare, and Fermanagh. The operating causes are readily seen in Dublin and Antrim, but for Tipperary, Donegal, Clare, and Fermanagh explanations may be looked for. The urban districts in Tipperary are five—Thurles, Carrick-on-Suir, Cashel, Clonmel, and Templemore. Donegal has only one—Letterkenny—with the high infantile death-rate of 133. In the matter of infantile mortality, Letterkenny is quite unworthy of the remarkably healthy county in which it is situated. The general death-rate in Clare is always higher than in Donegal, although it is by no means an unhealthy county. The united urban districts of Ennis and Kilrush, however, give it the high place it holds on the urban county rate. The general death-rate of Fermanagh is only a shade under that of Clare, and it owes its high position in the urban column of the county table entirely to the influence of Enniskillen. Longford shows the lowest urban rate. This is due to the fact that Granard, the only urban district in the county, has an infantile mortality so low as to render the rural county rate a shade higher than the whole county rate.

(To be continued.)

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science by leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume X. Diseases of the Nervous System. London: Sampson Low, Marston & Co., Ltd. 1897. 8vo. Pp. 859.

THE issue of the tenth volume of this work reminds us that the Editor has completed more than half his task. We heartily wish him a continuance of health, and of that ardour which has so far enabled him to surmount all difficulties in discharging his herculean labours.

In this, the tenth, volume of *Twentieth Century Practice* the all-important and difficult subject of Diseases of the Nervous System is discussed. The separate articles are few—ten in number; the authors are still fewer—six all told. Of the six contributors, five hail from the United States of America. The only European is Dr. Charles Samson Féré, Physician to the Hospice de Bicêtre, Paris. From his pen alone come nearly 300 of the pages in the volume. The next largest contributor is Dr. Joseph Collins, Visiting Physician to the Hospital for Nervous Diseases, New York, and Instructor in Nervous and Mental Diseases in the New York Post-Graduate Medical School. The other contributors are Dr. Sanger Brown, Professor of Medical Jurisprudence and Hygiene in the Rush Medical College, Chicago; Dr. Charles L. Dana, of New York, whose name is a household word as a neurologist of world-wide reputation; Dr. Howell T. Pershing, Professor of Nervous and Mental Diseases and Medical Jurisprudence, University of Colorado, Denver; and Dr. Bernard Sachs, Professor of Mental and Nervous Diseases, New York Polyclinic.

Dr. Collins' treatise on Disease of the Brain opens with a retrospective glance at the advances that have been made in the knowledge of the structure and architecture of the brain within the past fifty years; in the interpretation of its physiological action, and in the application of the principles of modern pathogenesis to a solution of its manifold diseases. The author points out that fifty years ago "Watson's 'Practice of Physic' was a storehouse of up-to-date medical lore in the English language. To-day it is held in esteem, not only because it is a historical repository, but because of the beauty of its style, and the felicity of its clinical descriptions. In the light of our present knowledge, its comments on the causation of disease are lamentable, its teachings on pathogenesis absurd, and its therapy semi-barbarous. It may be said that, withal, its clinical descriptions are unsurpassed, and this is readily granted. But descriptions of disease do not materially advance our ability to prevent or to treat them" (page 3).

We notice with some satisfaction that Dr. Collins discards the idea that cerebral anæmia and cerebral hyperæmia exist as "individual clinical entities." Accordingly, no space whatever is given to these conditions in his treatise. "Not many years ago," he says, "flimsy superstructures of symptoms were built, particularly by American and German writers, one to represent anæmia and the other hyperæmia of the brain. . . . For a time, happily a short one, these teachings were accepted by the profession, and long-drawn-out transcriptions of imagery, purporting to be a description of anæmia and hyperæmia of the brain, found their way into many text-books and treatises" (page 7). He adds: "To-day, while admitting that cerebral hyperæmia may occur during a paroxysm of pertussis, or associated with a dilated right heart, or even as the result of intense mental application, particularly in connection with the ingestion of cardiac stimulants, and that anæmia of the brain may occur as a manifestation of general hydræmia, the writer does not concede the necessity of considering these conditions as clinical entities nor (or) apart from the factors that produce them."

The section on the morphology and anatomy of the

brain is illustrated by a series of drawings from Van Gehuchten.

Among the brain diseases described by the author perhaps the most interesting are acute superior polioencephalitis (nuclear ophthalmoplegia), acute inferior polioencephalitis and polioencephalo-myelitis, and acute hæmorrhagic encephalitis. It is not going too far to say that the differentiation of these affections marks a new era in the diagnosis of cerebro-spinal lesions, and throws a flood of light upon a group of morbid symptoms which have been hitherto most perplexing, and have often eluded explanation.

Hereditary cerebellar ataxia, first described by Frazer in 1880, and subsequently by Nonne in 1891, is to be carefully distinguished from hereditary spinal ataxia (Friedreich's disease). First, the myotatic irritability, knee-jerks, ankle clonus and elbow-jerks are preserved or increased in the cerebellar disease. Secondly, true nystagmus is absent. Thirdly, the striking mental defect is diagnostic. Fourthly, its early onset, the absence of sensory symptoms, the intensity of inco-ordination in the upper extremities, and the titubation, or inability to preserve a constant perpendicular of the body, are all in favour of the cerebellar rather than of the spinal malady.

In writing on "Parasites of the Brain," Dr. Collins observes that "if a medical literature of Iceland and other polar regions existed, it is not at all unlikely that mention of its occurrence therein would be common."

It may interest Dr. Collins to refer him to a monograph on Helminthology, by Dr. H. Krabbe, of Copenhagen, which was published in 1865, and which deals especially with hydatid diseases in Iceland. The title of the work is "Helminthologiske Undersøgelser i Danmark og paa Island med særligt Hensyn til Blæreormlidelserne paa Island" (Helminthological Investigations in Denmark and Iceland, with special reference to Hydatid Affections in Iceland). Dr. Krabbe's work was reviewed by the late Dr. William Daniel Moore, of Dublin, in the number of the *British and Foreign Medico-Chirurgical Review* for October, 1866 (Vol. XXXVIII., page 285, *et seq.*). Dr. Krabbe informs us that

a regular system of medicine has existed in Iceland only during the last 100 years (he wrote in 1865). The first authorised physician in the island, Bjarne Povelsen, was appointed in 1760. He, as well as John Petersen, who flourished 1775–1801, and was author of an Icelandic medical work, and John Svendsen, 1794, in their descriptions of the “*Malum hypochondriacum*” and of the “*Hepatalgia omnis generis maxime frequens*,” all show that cases of the hydatid disease, though not fully recognised, had come under their observation. There is indeed good reason to believe that this affection has been epidemic in the island for centuries, as it is to the present day. In 1803 the five district physicians who were then practising in Iceland constantly mentioned hydatid disease as one of the most important chronic diseases of the island and as general in all districts of the country. We have ourselves referred to Dr. Krabbe’s work, and fail to find in it any mention of hydatid disease of the brain. As usual, echinococcus-cysts occur most frequently in the abdominal organs, particularly the liver. Examples are also recorded by Dr. Krabbe of the occurrence of echinococci superficially beneath the skin, especially around the upper part of the thorax. These observations should set at rest the question of the prevalence of hydatid disease of the brain in Iceland, although it may be that in fatal cases the brain has not been critically examined *post mortem*, and so local disease has escaped detection.

Very excellent indeed and admirably clear is Dr. Dana’s account of intracranial hæmorrhage, embolism, and thrombosis. We are tempted to quote one paragraph only in support of this statement. Dr. Dana writes—

“The reason for the particular location of cerebral hæmorrhages is explained upon simple mechanical causes. The blood pressure in the internal carotid is about one hundred and fifty millimetres. Now, the blood passing through the internal carotid goes almost directly into the circle of Willis, and with almost equal directness into the central arteries which are given off from it and its branches; consequently the blood pressure in these central arteries is relatively high. On the other hand, the blood pressure in the cortical arteries, owing to their length and wide distribution, is much lower. One

of the arteries which seems to receive this excessive pressure most directly is a branch of the middle cerebral known as the *Lenticulo-striate artery*, and Charcot calls this 'the artery of cerebral hæmorrhage'" (page 289).

It is much to be regretted that the usefulness of a beautiful figure, at page 274, showing the part of the brain most often affected in cerebral hæmorrhage has been curtailed by cutting off the sides of the plate, and with them the explanatory lettering of the various structures shown in the section. The letters "C.N.," "L.N.," "O.T.," "E.C.," and "I.C." have, however, been inserted to compensate in some measure for this defect.

Dr. Bernard Sachs, of New York, contributes an article on Cerebral Tumours, in which he discusses with much ability the question whether the results of surgical treatment have been such as to encourage us to recommend surgical interference in many cases. He points out that, *for the present*, tumours at the base of the brain and in the interior cannot be reached by the surgeon. "From my own experience," he says, "I am convinced that cranial surgery must be practised with even greater care than has been the case hitherto, and that above all the effect of shock from the operation must be avoided." But how is it to be avoided?

Dr. Joseph Collins writes on Diseases of the Meninges. His divisions of the subject are: Leptomeningitis, meningeal tuberculosis, sarcomatosis of the pia, chronic meningitis, syphilitic meningitis, cerebro-spinal syphilis, pachymeningitis, and meningeal hæmorrhage.

M. Charles Féré's monograph on Hysteria is characteristically French. It simply bristles with "jaw-breaking" technical terms, among which the *æsthesias*, *odynias*, and *algias* take first place. But this is, no doubt, in part due to the subject. The section on the nature of hysteria, if somewhat abstruse, is an interesting historical survey. M. Féré considers that "the new discoveries concerning the morphology of the nerve-cells, and in particular those of the cerebral cortex which have resulted from the works of Golgi and Ramon y Cajal, have served to explain the theoretical conceptions of the psychomotor functions in

general and of the manifestations of hysteria in particular" (page 558).

Two elaborate articles from the same pen on "Epilepsy" and "The Spasmodic Neuroses" respectively follow. The three concluding *brochures* in the volume are on "Neurasthenia," by Dr. Dana; "The Disorders of Speech," by Dr. Howell T. Pershing, of Denver; and "The Disorders of Sleep," by Dr. Sanger Brown, of Chicago.

The reputation of "Twentieth Century Practice" is well maintained by this tenth volume, which is one of the best as it is one of the most important as regards the subject-matter which has yet appeared.

King's College Hospital Reports; being the Annual Report of King's College Hospital, and of the Medical Department of King's College. Edited by NESTOR TIRARD, M.D.; W. W. CHEYNE, F.R.C.S.; JOHN PHILLIPS, M.D.; and W. D. HALLIBURTON, M.D. Vol. III. 1895-1896. London: Adlard & Son. 1897. Pp. 334.

OWING to the death of Sir George Johnson in June, 1896, many changes in the hospital staff occurred, on account of which some delay took place in the publication of this, the third, volume of the King's College Hospital Reports. The book fittingly opens with a notice of the deceased physician; then come a number of medical and surgical papers. Ernest W. White contributes a good sketch of Puerperal Insanity. Mr. F. F. Burghard appears as a strong advocate of the injection of carbolic acid as a radical cure of hydroceles in children. After emptying the sac by means of a hypodermic needle, he injects through the same needle from 5 to 8 minims of concentrated carbolic acid. This procedure, he says, is not followed by pain or any other discomfort. Dr. R. Crawford contributes a thoughtful paper on the Emotional Origin of Graves's Disease, and Mr. Vernon Cargill on Eye Injuries.

Then come reports—the first being that on the Surgical Department of the Hospital, and careful notes are given of all the fatal cases—49 in number—that occurred in the hospital. Is not this full report of cases which did not recover a model for other surgical hospitals to follow? There

are also reports on the work done in the Medical and Obstetrical Wards, and the Anæsthetic and Pathological Departments.

A new ophthalmological theatre has been built in memory of Sir G. Johnson ; it is described with plans and woodcuts.

The volume as a whole is first-class, and worthy of the hospital from which it comes.

The Nervous Affections of the Hand, and other Clinical Studies. By GEORGE VIVIAN POORE, M.D., F.R.C.P.; Physician to University College Hospital; Professor of Clinical Medicine and of Medical Jurisprudence, University College, London; Consulting Physician to the Royal Infirmary for Women and Children; Physician to the Cheyne Hospital for Incurable Children, &c. London: Smith, Elder & Co. 1897. Pp. 308.

THIS is a valuable and interesting book, and we derived both profit and pleasure from its perusal. Dr. Poore has been for many years known as one of our best authorities on that group of diseases sometimes called "Occupation-Neuroses." From time to time he has delivered lectures or published articles on these affections. These papers are now collected, and form the most important part of the volume before us. They, and indeed all the essays in this volume, show evidence of thoroughness—wide experience, careful examination of other writers' works, and deep thought and consideration upon each case reported.

The first chapter contains the Bradshawe Lecture for 1881 on Nervous Affections of the Hand; the second is a careful and exhaustive study of Writers' Cramp. Of this, slight neuritis, as evidenced by some tenderness over the nerves, is much the most common cause. Many other causes also exist—as slight hemiplegia, congenital left-handedness, various chronic affections of the central nervous system, &c. In the ordinary form, due to neuritis, Dr. Poore applies blisters until the tenderness is removed, and then (and not till then) uses massage, and the continuous electric current, during the application of which the patient makes various voluntary movements with the affected muscles. To illustrate his

paper he gives a *résumé* of about 200 cases he has seen; these are arranged in groups according to the cause and pathology of the trouble in each case. Some of the cases are reported at length, details of the symptoms and treatment being given, so that the whole forms a most valuable treatise. The third and fourth Lectures are concerned with similar subjects—Tailors', Hammermen's, Pianists' Cramp.

These sections, forming about half the work, are its most important part, as forming together one homogeneous whole. The other lectures refer to a variety of subjects, but are valuable from the care and thoroughness which they display. Four are on different kinds of poisonings—by food, lead, phosphorus, and a case of auto-intoxication. Dr. Poore seems to believe that cases, described as acute yellow atrophy, may be caused by phosphorus; at any rate he gives good reasons for believing that there is some connection between these conditions.

There is an interesting lecture on Albuminuria in relation to Life Insurance. Dr. Poore thinks that the number of cases of kidney disease is increasing at the present day.

There are lectures on Gout, Heart Disease, Tuberculosis, and other subjects which will well repay perusal.

In all he writes Dr. Poore is thoughtful and suggestive. We can warmly recommend this work to the notice of our readers.

A System of Medicine by many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M.A., M.D., LL.D., F.R.C.P., F.R.S., F.L.S., F.S.A.; Regius Professor of Physic in the University of Cambridge; Fellow of Gonville and Caius College. Volume III. London: Macmillan & Co. 1897. 8vo. Pp. 1001.

WITH commendable expedition the Editor has issued the third volume of this able and comprehensive System of Medicine. We should perhaps say the fourth volume, for the second instalment of the work was "A System of Gynæcology."

The contents of the present volume are general diseases of obscure causation, diseases of alimentation and excretion,

diseases of the stomach, peritoneum and bowels, with interesting descriptions of sub-phrenic abscess and of diaphragmatic hernia by Dr. W. Lee Dickinson, Assistant Physician to Saint George's Hospital; a discussion of abdominal diagnosis from a gynæcological standpoint by Dr. W. S. Playfair, and an article on enteroptosis by Mr. Frederick Treves. The "dropping of the viscera" is, Mr. Treves thinks, an intelligible English equivalent for the names "enteroptosis," or "visceroptosis." Unfortunately he does not hesitate to adopt the latter barbarous hybrid—the correct term is of course "splanchnoptosis," or perhaps more accurately "coeliptosis"—*τὰ σπλάγχνα* properly signifying the thoracic and not the abdominal viscera. General ptosis of the latter was first fully described by Glénard in 1885, and the condition with its attendant symptoms is now known as Glénard's Disease. Mr. Treves gives a very graphic account of the affection which is an undoubted morbid entity.

What will our friend Dr. T. J. Maclagan say when he finds "Acute Rheumatism, or Rheumatic Fever" placed in the very forefront of general diseases "of obscure causation?" Certainly Dr. W. S. Church's definition of acute rheumatism strikes us as inadequate and unsatisfactory. "In this article," he writes, "acute rheumatism will be considered as equivalent to a synovitis accompanied by pyrexia, and generally multiple." Surely the disease is much more than this. What about the profuse sweating, the heart and pericardial lesions, the skin eruptions, the subcutaneous nodules (beautifully illustrated in a subsequent article on the acute rheumatism of childhood by Dr. W. B. Cheadle), the complications and sequelæ of a disease which haunts particular houses in such a way as to lend support to a theory that it is infectious? Happily we need not appraise the value of Dr. Church's excellent article on acute rheumatism by the faultiness of his definition of the malady. As regards the ætiology of acute rheumatism, the author adopts no theory, while admitting that much may be said in favour of its being an infective disease. We are disposed to agree with Dr. Church in the opinion that the peculiar sour smell of the sweat in acute rheumatism is due to fermentative changes which take place in the perspiration after it is poured out.

The use of willow bark, its active principle, salicin, and the salicylates in the treatment of the disease is of course admitted by the author, but he really seems to have been at some pains to suppress the name of Dr. T. J. MacLagan in connection with this particular subject, although he quotes him elsewhere in the article.

In this part of the volume there are very full accounts of rickets by Dr. Cheadle; gout, by Sir William Roberts, who advises gouty patients to restrict their use of sodium chloride as a condiment, and to substitute for it, as far as practicable, the use of potassium chloride; diabetes mellitus, by Dr. Robert Saundby, who also revised the following article on diabetes insipidus, by the late Dr. Charles Henry Ralfe; and lardaceous disease, by Dr. Howship Dickinson.

There is room for question whether an interesting article on shock and collapse, by Dr. Louis Cobbett, the John Lucas Walker student of Pathology in the University of Cambridge, should find a place, as it does, in the section devoted to diseases of Alimentation and Excretion. Equally open to question is the grouping of sea-sickness and of "Mountain Sickness" with diseases of the stomach. The two contributions just mentioned are excellent—that on sea-sickness is written by Dr. J. R. Stocker, Medical Officer, Board of Trade, Glasgow; that on mountain-sickness is from the pen of the editor himself, who apologetically explains that, never having ascended higher than Mont Blanc, he was long disposed to disbelieve in any such malady, regarding the state rather as a compound made up of fatigue, dyspepsia, and heart failure. The experience of climbers—such as Sir Martin Conway, Mr. Whymper, and others—at far higher altitudes is, however, conclusive that there is a definite disorder thus designated, and that it makes its appearance in all persons who have climbed to a certain altitude—about 16,500 feet.

Among the remaining notable communications in this volume we can mention only a few. Neuroses of the stomach have been done by the editor, who also describes dilatation of this organ. Dr. Julius Dreshfield writes on ulceration of the stomach and also of the duodenum; Dr. W. Hale White on tumours of the stomach. There is an excellent article on diarrhoea by Dr. Lauder Brunton, followed by an equally

good one on diarrhœas of children by Dr. Eustace Smith. Diseases of the peritoneum are ably dealt with by Dr. Allchin, and Mr. Frederick Treves. The latter also writes on intestinal obstruction and perityphlitis. A practical, but short section on the differential diagnosis of diseases of the anus and rectum, by Dr. Herbert Wm. Allingham, brings the volume to a close.

There are wonderfully few misprints or printers' errors. In addition to the few corrected on page xiii., we noticed some German proper names misspelled—for example, Kulz for Külz (page 3), Reiss for Riess (page 37), Zeigler for Ziegler (page 277). These few and trifling blemishes do not detract from the literary and scientific value of the book, which is worthy of the instalments of the system of medicine which have preceded it.

Food in Health and Disease. By I. BURNEY YEO, M.D., F.R.C.P. New and Revised Edition. London: Cassell & Co. 1896. Demy 8vo. Pp. 592.

THE practitioner who gives a proper place to the study of dietetics will welcome a new and revised edition of Dr. Burney Yeo's excellent work on "*Food in Health and Disease.*" Two important chapters have been included in the new volume which had no place in the first edition—viz., Diet in Affections of the Circulatory and Respiratory Organs; and Food in Acute and Chronic Rheumatism, Rheumatoid Arthritis, in Skin Diseases, in Insanity, and certain other Affections of the Nervous System.

In acute rheumatism three or four pints of diluted milk, to which have been added sodium bicarbonate and common salt, are recommended as the daily dietary, and, in addition, barley water and thin oatmeal gruel may be taken; but all meat extracts or animal broths are condemned during the febrile stage. Pastry, sweets, and fermented drinks are prohibited even during convalescence. In chronic rheumatism only light, nutritious and readily-digested food should be allowed, whereas in rheumatoid arthritis a generous diet is necessary. In skin diseases where dyspeptic conditions exist these must

be treated accordingly, but "in parasitic skin affections dietetic treatment is utterly useless."

Minute instructions are given as to the "forcible feeding" of the insane by means of the oesophageal tube, and the advantages of mouth over nasal feeding are detailed.

To Appendix I., which contained a list of hospital dietaries, is now added Appendix II., which contains a lucid account of the means by which milk is sterilised and Pasteurised.

"Perfect sterilisation can only be effected by submitting the milk to the action of continuous steaming for two hours at a temperature of 248° F., or for 30 minutes at a temperature of 266° F., but this produces changes in the milk which are not desirable"—changes which render this important article of diet more indigestible, and therefore less useful as a food for infants. For this reason resort is had to Pasteurisation, in which the milk is exposed to the comparatively low temperature of 140° to 147° F. By this method the milk is more agreeable to the taste, and more easily digested; but, on the other hand, all the bacterial spores are not killed, fermentation is only temporarily checked, and the tubercle bacillus is not destroyed. So that where the latter bacillus is suspected recourse must be had to boiling. Cathcart's method of sterilising milk, described as the cheapest and least troublesome, is detailed at length.

We recommend Mr. Yeo's book to all conscientious practitioners, not one of whom will consult its pages without deriving therefrom information on dietetics which he will find no less useful than a knowledge of the drugs by which he hopes to alleviate suffering and combat disease.

Bazar Medicines and Common Medical Plants of India.

By EDWARD JOHN WARING, C.I.E., M.D. Fifth Edition.

London: J. & A. Churchill. 1897. Crown 8vo. Pp. 292.

THE fact that this little volume has reached its fifth edition is a strong guarantee that its existence is justified. Its function is plainly set out by the author:—"As a guidance to our Indian fellow-subjects, and particularly to those to whom the trained medical practitioner is unable to extend his fostering care."

The contents of the book are the introduction, which gives an expedient, in the absence of proper weights, to deduce them from the weight of a rupee, which weighs 180 grains, &c.

Part I. contains the names of some 80 drugs that are sold in the Indian bazaars, with their botanical names and therapeutic uses. It might be suggested from the nature of the work, "the appearance and physical properties of the drugs," as they are to be used by people who are not qualified medical men, should be given.

Part II. is a synopsis of diseases, with special reference to their treatment by the remedies mentioned in Part I. We may here give the remark of a Surgeon-Major in the Indian Army, that there is "no text-book that gives the detailed treatment of chronic dysentery in the English language."

Appendix A gives directions for restoring the apparently dead from drowning. Appendix B contains a summary of treatment of persons bitten by venomous snakes; we would rather die than undergo the shocking treatment that the author describes, and hope that the light of modern science will soon flow in on this dark scene of medical horror. The precautions against getting bitten are sensible and valuable. Appendix C describes a method of treating small-pox by carbolised oil. Appendix D is devoted to the clinical thermometer. Appendix E includes a list of apparatus.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections. Edited and annotated by J. J. PRINGLE, M.B., F.R.C.P.; Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. Parts X. and XI. London: The Rebman Publishing Co., Ltd. 1897.

WE have so often spoken in terms of praise of this splendid work that little more is required of us than to record the well-nigh simultaneous publication of the tenth and eleventh parts of the Atlas.

The tenth fasciculus contains four plates of photo-lithochromes, with the accompanying explanatory letterpress. Of the plates, the first illustrates a type of polymorphous eruption which often occurs in secondary syphilis. The

model from which the photo-lithochrome was taken was made by Baretta, in 1893, from a patient under the care of Professor Fournier in the St. Louis Hospital, Paris. The polymorphous syphilides represented show a predominance of lichenoid and miliary forms. The second plate represents a model of Paget's disease of the nipple, made by Baretta in 1886 from a patient under M. Vidal's care in the St. Louis Hospital. The case is described at length by M. J. Darier. In the third plate there is contained a beautiful illustration of trophic ulcers of the hand and forearm in a workman who was injured by the bursting of the tube of a copper steam engine on March 11th, 1892. He was treated by M. Quinquaud in the St. Louis Hospital. The lesions represented in the photo-lithochrome made their appearance some eleven months after the primary injury. The case is described by M. Lucien Jacquet. The fourth plate contains pictures of a series of syphilitic chancres affecting the face and breast. The descriptive letterpress is from the pen of Professor Alfred Fournier, Physician to the St. Louis Hospital.

The eleventh fasciculus is a very interesting one, presenting much variety in its contents. It contains five plates. The first shows hidroic erythema of the hands and lips in a patient under the care of M. R. du Castel, in the St. Louis Hospital in 1893. He was a young man of twenty-seven, of robust constitution, without any noteworthy hereditary antecedents or syphilitic history. The lesions shown on the back of the hand present, in the most perfect manner, the characteristics of Bazin's "*Hydroa vesiculosum*"—the "*Erythema multiforme*" of M. Besnier—"Erythema iris" or "*en cocarde*"—the "*Herpes iris*" of Bateman. By the way, there is a twofold error in Bazin's name for this skin affection. First, the Greek word is *ἵδρωα* or *ἰδρῶα*, not *ὑδρῶα*. Next, *ἵδρωα* is a neuter plural, so that the qualifying adjective should be "*vesiculosa*," not "*vesiculosum*." The two following photo-lithochromes are described by M. Georges Baudouin. Of these, the first shows a good example of the pigmented or freckled syphilide which locates itself most frequently upon the neck. It is the "*granular syphilide*" of Monneret and Hardy, but Pilon in his Thesis on the syphilitic exanthemata (in 1857) gave it the name which it has since borne—*pigmented* or *freckled syphilide*.

“*Molluscum contagiosum*” (Bateman) in a syphilitic subject is shown in the other plate described by M. Baudouin. M. Ernest Gaucher demonstrates an illustration of vascular *nævus verrucosus* of the leg which was modelled by Baretta in 1894 from a patient under M. Gaucher’s care at the Saint Antoine Hospital.

The last illustration in the eleventh fasciculus is a remarkable example of *Pediculosis vestimentorum* with pigmentation. The model was made by Baretta in the present year (1897) from a patient under the care of M. Ernest Besnier. “*Maculæ cæruleæ*,” or “*taches bleuâtres*,” are well shown in the plate, constituting the appearance now known as *parasitic melanoderma*.

The parts of the Atlas we have been discussing are exquisite specimens as well of printing as of the photo-lithochromic art. They reflect equal credit on the editor and on the publishers. Their artistic perfection make us all the more regret a rumour which has reached us to the effect that the work is nearly complete.

Archives of the Roentgen Ray. Edited by W. S. HEDLEY, M.D., and SYDNEY ROWLAND, M.A., M.R.C.S. London: The Rebman Publishing Company, Limited. July, 1897. Folio. Pp. 20. Vol. II. No. 1.

THIS is our old friend—if we can speak of a periodical aged one year as “old”—the “*Archives of Clinical Skiagraphy*” slightly modified in form and considerably increased in size.

The editors tell us that the more comprehensive title indicates the wider field this journal is intended to cover in the present and future. It “now appears as a quarterly record of all that appertains to the Roentgen ray. Whilst there was yet a possibility that the latter might prove to be something which had been observed before, it was modestly called by its discoverer the ‘X-ray.’ This name seems the less appropriate now that it is known to be Roentgen’s ray; and there is a fitness in naming it so—if for nothing else than ‘the perpetuation of testimony.’”

It will interest our readers to learn that there is now a Roentgen Society with all its paraphernalia of President, Vice-Pesidents, Council, Treasurer, Secretary, and one Honorary Member—Professor Roentgen himself. The

President is Professor Silvanus P. Thompson, D.Sc., F.R.S. The Society held its first General Meeting on June 3rd, 1897 in the rooms of the London Medical Society, Chandos-street, when "laws" were passed, members enrolled, and officers elected. The first object of the Society is "to discuss the Roentgen rays in their relation to medicine, the Arts and Sciences." Why should not "Medicine" have a capital M? The second object is "to discuss and exhibit apparatus and methods in connection with the rays." Then meetings are to be held periodically; a museum, library, and Roentgen ray appliances are to be provided; and transactions are to be published in a convenient form.

The present number of the "Archives" is well got up, and its contents are varied and instructive. The President's erudite article on the nature of Roentgen's rays is extremely interesting and clear. Dr. Hedley, one of the editors, also gives a survey, present and retrospective, on the rays. Then follows a description of the five plates which are included in the number. Probably the most interesting of the illustrations is an X-ray picture at one exposure of an entire adult body. This radiograph, with descriptive details, has also appeared in the New York *Electrical Engineer*. It was taken by Dr. William J. Morton, of that city. The apparatus employed was a twelve-inch induction coil, whose primary was supplied from the 117 volt Edison current of the street mains, and made and broken by means of a break wheel, causing about 5,000 breaks a minute. The time occupied, including stoppages, was thirty minutes. The woman was fully clothed, excepting as to corsets.

This number of the "Archives" like its predecessors has been artistically brought out by the publishers, on whom it reflects much credit.

Schedules for Plant Description. By JOHN WISHART.
Edinburgh: E. & S. Livingstone. 1897.

THESE schedules are very well arranged for field work, a well filled-in schedule of *Cheiranthus Cheiri* being used as an example. The use of these schedules by pupils will train their powers of observation and of reasoning, and prevent them from being contented with book knowledge.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

CLINICAL RECORD.

Case of Appendicitis complicated by Acute Peritonitis: Recovery.
By FREDERICK WARREN, L.R.C.P.I., L.R.C.S.I.

PATIENT, C. R., a lad aged fifteen years. Last Christmas the patient had an attack similar to the present one, only the symptoms were much less severe.

On the night of August 4th, 1897, C. R. went to bed apparently quite well, and slept well throughout the night. When he awoke next morning, about 8 30 a.m., he complained of pain in the lower part of his "stomach" (abdomen), and when asked to point where the pain was most severe, he at once put his fingers over the right iliac fossa; this region was also very tender to the touch. The point of maximal tenderness was at the junction of the middle and inner thirds of a line drawn from the right anterior superior spine of the ilium to the umbilicus (M'Birney's spot). This extremely tender area was very small—it could be covered by a shilling piece. When I made gentle pressure at various points with the tip of my index finger over the painful region, and then came on this spot, the patient invariably complained of great pain. The abdomen was not distended. He also complained of nausea. A couple of hours after the onset of his illness he began to vomit, at first the contents of the stomach, and afterwards bile. There was no tumour or fulness in the right iliac fossa. The patient was constipated, but passed some flatus per anum. On examination per anum the rectum was empty; tongue was thickly furred; temperature, 102°; pulse, 120; respiration, 22.

On the 6th, at 8 30 p.m. (thirty-six hours from onset of illness), the patient was suddenly seized with agonising pain in the abdomen, which was not localised, but was diffused all over the cavity. The tenderness, which was limited to the right iliac fossa, had now become diffused all over the abdomen, and was most intense; the patient would not let one touch him at all. Both legs were drawn

up in bed. He now began to vomit again. Micturition and the passage of flatus per anum were both very painful. The abdominal muscles were very rigid. Liver dulness normal; temperature, 102°; pulse, 126.

Urine—High coloured; acid in reaction; specific gravity, 1020; contains a small quantity of albumen.

On the tenth day of his illness the temperature was normal, and the patient felt quite well; but on the fourteenth day his temperature went up to 100°, and his pulse to 90. This rise in temperature I attributed to constipation; he was two and a half days without having passed a motion. I gave soap and water enemata, but they did no good. I then administered 10 ozs. of warm olive oil as an enema, which was retained, and repeated this in twelve hours; this acted splendidly; the patient passed a large motion, and the temperature came down to normal after it.

Treatment consisted of—diet, milk and soda water in small quantities frequently; opium internally; hot fomentations externally; enemata of warm olive oil.

Points of interest in this case are:—

1. Its very sudden onset.
2. The onset of acute peritonitis in thirty-six hours.
3. The point of maximal intensity of pain and tenderness (M'Birney's spot) was so well marked.
4. No tumour or fulness could at any time be made out in the right iliac fossa.
5. The benefit derived from the enemata of warm olive oil.

APPENDICITIS AND THE BERRY CROP.

THE seed theory of appendicitis has become so widespread among the laity that it is said to have interfered very seriously with the sale of small fruits this season. The result is that the unsuperstitious and the "appendicised" are enjoying an abundance of the healthful berries, to the scandal of their timid neighbours.

A MAN OF WEIGHT.

UNDER the heading "*Enterrement d'un homme de poids*" the *Gazette Médicale de Paris* reports the interment of a butcher at Mondeville, near Caen, who weighed 251 kilograms—over 553 lbs., more than 39½ stone. The coffin was 2 metres long, 1.05 m. high, and 85 centimetres in breadth. We are not surprised to hear that "*cette cérémonie a vivement impressionné toutes les personnes qui assistaient aux obsèques de M. Brisollier.*"

MEDICAL EDUCATION AND EXAMINATIONS IN IRELAND.

1897-1898.

MEDICAL students in Ireland, as elsewhere, have in the first instance to choose between University Degrees and Non-University Qualifications or Diplomas. Should they elect to try for an University Degree, their choice must lie between the University of Dublin, which requires a Degree in Arts before registrable Degrees in Medicine, Surgery, and Midwifery are conferred, and the Royal University of Ireland, which—while not requiring a full Arts Degree—yet rightly insists on a liberal education in Arts, tested by more than one searching examination in the same, before a candidate graduates in the three branches of medicine already mentioned—Medicine, Surgery, and Midwifery.

Outside the Universities, the chief Licensing Bodies are the Royal Colleges of Physicians and Surgeons. The Conjoint Examination Scheme between the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Dublin has ceased to exist. The position of the latter body as a Licensing Corporation under the Medical Act of 1886 has been defined by the appointment of Examiners in Surgery by the General Medical Council at the bidding of Her Majesty's Privy Council. The Royal Colleges are in a position to give a first-class working qualification in Medicine, Surgery, and Midwifery—a qualification which is registrable under the Medical Acts, which is universally recognised as one of high merit, and the possession of which is attended by no disabilities, such as preventing its possessor from dispensing medicines or keeping open shop for the sale of medicines if he is legally qualified to do so.

The Medical Schools in Ireland are—(1.) The School of Physic in Ireland, Trinity College, Dublin; (2.) The Schools of Surgery of the Royal College of Surgeons in Ireland (including the Carmichael College of Medicine and the Ledwich School of Medicine); (3.) The Catholic University Medical School, Cecilia-street, Dublin; (4.) The School of

Medicine, Queen's College, Belfast; (5.) The School of Medicine, Queen's College, Cork; and (6.) The School of Medicine, Queen's College, Galway.

Facilities for Clinical Instruction in fully-equipped Medico-Chirurgical Hospitals exist in Dublin, Belfast, Cork, and Galway; but, as a rule, the Schools of Medicine in Ireland are not attached to a given hospital, or *vice versâ*, as is the case in London and other large centres of medical education. The student will, however, have little difficulty in selecting a hospital in the wards of which he will receive excellent bedside teaching, and have ample opportunity of making himself familiar with the aspect and treatment of disease.

The detailed information which follows is authentic, being taken directly from the published calendars of the respective licensing bodies.

REGULATIONS PRESCRIBED BY THE GENERAL MEDICAL COUNCIL.

With regard to the course of Study and Examinations which persons desirous of qualifying for the Medical Profession shall go through in order that they may become possessed of the requisite knowledge and skill for the efficient practice of the Profession, the General Medical Council have resolved that the following conditions ought to be enforced without exception on *all* who commence their Medical Studies at any time after Jan. 1, 1892:—

(a.) With the exception provided below, the period of Professional Studies, between the date of registration as a medical student and the date of Final Examination for any Diploma which entitles its bearer to be registered under the *Medical Acts*, must be a period of *bonâ fide* study during not less than five years.

(b.) In every course of Professional study and Examinations, the following subjects must be contained:—

- (I.) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity.
- (II.) Chemistry, including the principles of the Science, and the details which bear on the study of Medicine.
- (III.) Elementary Biology.
- (IV.) Anatomy.
- (V.) Physiology.
- (VI.) *Materia Medica* and Pharmacy.
- (VII.) Pathology.
- (VIII.) Therapeutics.

- (IX.) Medicine, including Medical Anatomy and Clinical Medicine.
- (X.) Surgery, including Surgical Anatomy and Clinical Surgery.
- (XI.) Midwifery, including Diseases peculiar to Women and New-born Children.
- (XII.) Theory and Practice of Vaccination.
- (XIII.) Forensic Medicine.
- (XIV.) Hygiene.
- (XV.) Mental Disease.

The first four of the five years of Medical Study should be passed at a School or Schools of Medicine recognised by any of the Licensing Bodies, provided that the First Year may be passed at a University, or Teaching Institution recognised by any of the Licensing Bodies, where the subjects of Physics, Chemistry, and Biology are taught.

A student who has, previous to registration, attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any University, School of Medicine, or Teaching Institution recognised by any of the Licensing Bodies, may without further attendance be admitted to examination in these subjects: provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

The exception referred to above in (a) is as follows:—

Graduates in Arts or Science of any University recognised by the General Medical Council who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, are held to have completed the first of the five years of Medical Study.

The Examinations in the Elements of Physics, Chemistry, and Biology should be passed before the beginning of the Second Winter Session.

I.

UNIVERSITY OF DUBLIN.

DEGREES AND DIPLOMAS IN MEDICINE, SURGERY, AND MIDWIFERY.

The Degrees and Diplomas in Medicine, Surgery, and Midwifery granted by the University are as follows:—

The Degrees are:—

1. Bachelor in Medicine.
2. Bachelor in Surgery.
3. Bachelor in Obstetric Science.
4. Doctor in Medicine.
5. Master in Surgery.
6. Master in Obstetric Science.

The Diplomas are :—

1. Diploma in Medicine.
2. Diploma in Surgery.
3. Diploma in Obstetric Science.

Besides these Degrees and Diplomas, the University also grants a—

Qualification in State Medicine.

REGULATIONS FOR STUDENTS WHO MATRICULATED ON OR BEFORE 25TH NOVEMBER, 1891.

The following conditions must be fulfilled in order to qualify for the Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.).

I. The Student must be of B.A. standing, and his name must be for at least four (Academic) years on the Books of the Medical School, reckoned from the date of his Matriculation. He may carry on his Arts Course concurrently with the Medical Course, and he need not have taken his B.A. before presenting himself for his Medical Degrees Examinations, but he cannot have the Medical Degrees conferred without the Arts Degree.

II. The following Courses must have been attended :—

[NOTE.—The Courses marked (*) must have been taken out before the Student can present himself for *any* of the Degree Examinations. In addition the Courses marked thus (†) must have been taken out, before he can present himself for B.A.O., and the Courses marked thus (‡) before he can present himself for B.Ch.]

1. LECTURES.

WINTER COURSES.

<p>*<i>Systematic Anatomy.</i></p> <p>■ <i>Practical Anatomy (with Dissections), 1st year.</i></p> <p>‡ <i>Practical Anatomy (with Dissections), 2nd year.</i></p> <p>‡ <i>Applied Anatomy (with Dissections).</i></p>	<p>*<i>Chemistry.</i></p> <p>‡ <i>Surgery.</i></p> <p>*<i>Physiology.</i></p> <p>*<i>Practice of Medicine.</i></p> <p>‡ <i>Midwifery.</i></p>
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SUMMER COURSES.

<p>*<i>Practical Chemistry.</i></p> <p>*<i>Practical Histology.</i></p> <p>*<i>Botany.</i></p> <p>*<i>Zoology.</i></p>	<p>*<i>Materia Medica.</i></p> <p>*<i>Medical Jurisprudence and Hygiene.</i></p> <p>‡ <i>Operative Surgery.</i></p>
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TERM COURSES.

**Physics.*—Michaelmas and Hilary Terms.

***2. HOSPITAL ATTENDANCE.**

1. Three Courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other Metropolitan Hospital recognised by the Board of Trinity College.

Students who shall have diligently attended the practice of a recognised London or Edinburgh Hospital for one year, of a recognised County Infirmary, or of a recognised Colonial Hospital for two years previous to the commencement of their Metropolitan Medical Studies, may be allowed, on special application to the Board of Trinity College, to count the period so spent as equivalent to one year spent in a recognised Metropolitan Hospital.

***3. PRACTICAL VACCINATION.**

One month's instruction in Practical Vaccination to be attended at the Vaccine Department, Local Government Board for Ireland, 45 Upper Sackville-street; at No. 1 East Dispensary, 11 Emerald-street; or, until further notice, at the Grand Canal-street Dispensary.

***4. FEVER CASES.**

A Certificate of personal attendance on not less than five cases of Fever, with names and dates of the cases.

†5. PRACTICAL MIDWIFERY.

A Certificate of attendance on a six months' Course of Practical Midwifery with Clinical Lectures, including not less than thirty cases.

‡6. OPHTHALMIC SURGERY.

A Certificate of attendance on a three months' Course of Ophthalmic Surgery.

III. The following Examinations must be passed:—

A.—The Previous Medical or Half M.B. Examination.

B.—The Degree Examinations.

A.—PREVIOUS MEDICAL EXAMINATION.

This Examination is divided into—

1. Physics and Chemistry.

2. Botany and Zoology.

3. Anatomy and Institutes of Medicine (Practical Histology and Physiology).

The Examination in Anatomy includes examination on the dead subject.

Before presenting himself for examination in any of the subjects the Student must have obtained credit for the corresponding Courses of Lectures and Practical Instruction.

It is not necessary that the Student should pass in all these subjects at the same examination; he is allowed to present himself for examination in as many, or as few of them as he pleases.

A Candidate rejected at the May Examination will not be allowed to present himself for examination *in the same subjects* at the June examination.

Candidates who fail in any part of the Examination are liable to be excluded from further examination *in the same subjects*, for a period not exceeding six months, if, in the opinion of the Examiners, they have given evidence of careless preparation.

Any Student who has obtained a Moderatorship in Natural Science, or a First Honor in Natural Science in both his junior and Senior Sophister years, and has credit for attendance at not less than thirty Lectures in Botany and Zoology in his Sophister years, may present himself at the Previous Medical Examination in these subjects.

Examinations will be held on Nov. 8, Jan. 24, May 23, June 23, June 27, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 1 and 5; Jan. 17 and 21; May 16 and 20; June 16 and 21; June 20 and 24, respectively.

No Candidate will be allowed in for any Examination unless he has given notice within the days specified.

B.—DEGREE EXAMINATIONS.

There are three Degree Examinations, the B.A.O., the B.Ch., and the M.B. These may be taken in any order, provided that the requisite conditions have been fulfilled, and the Previous Medical Examination passed in all subjects.

1.—*Bachelor in Obstetric Science* (B.A.O.).

The Candidate must lodge with the Registrar of the School of Physic his Certificate of attendance on Practical Midwifery. He must also produce his Certificates of attendance on Hospital, Fever, and Vaccination, unless these have been already produced.

The Candidate is then required to pass an Examination in the following subjects:—

1. Practice of Midwifery.
2. Gynæcology.
3. Obstetrical Anatomy.

Fee for the Degree of Bachelor in Obstetric Science, £1. There is no *Liceat* Fee.

Examinations will be held on Nov. 15, Jan. 31, May 31, and following days. Notice must be given to the Registrar of the

School of Physic between Nov. 8 and 12; Jan. 24 and 28; May 23 and 27, respectively.

No Candidate will be allowed in for any Examination unless he has given notice within the days specified.

2.—Bachelor in Surgery (B.Ch.).

The Candidate must lodge with the Registrar of the School of Physic his *Liceat* Fee and his Certificate of Attendance on a Course of Ophthalmic Surgery.

He must also produce his Certificates of Attendance on Hospital, Fever, and Vaccination, unless these have been already produced.

The Candidate is then required to pass an Examination in the following Subjects:—

- | | |
|--|------------------------|
| 1. Clinical Surgery. | 4. Surgical Anatomy. |
| 2. Operative Surgery (on the
dead subject). | 5. Surgical Pathology. |
| 3. Surgery. | 6. Ophthalmic Surgery. |

Fee for the *Liceat ad Examinandum*, £5.

Fee for the Degree of Bachelor in Surgery, £5.

Examinations will be held on Nov. 29, Feb. 14, June 13, and following days. Notice must be given to the Registrar of the School of Physic between November 22 and 26; Feb. 7 and 12; June 6 and 10, respectively.

No Candidate will be allowed in for any Examination unless he has given notice within the days specified.

3.—Bachelor in Medicine (M.B.).

The Candidate must lodge with the Registrar of the School of Physic his *Liceat* Fee, together with Certificates of Attendance on Hospital, Vaccination and Fever, unless these have been already produced.

The Candidate is then required to pass an Examination in the following subjects:—

- | | |
|--------------------------|--|
| 1. Clinical Medicine. | 5. Medical Anatomy. |
| 2. Practice of Medicine. | 6. Medical Jurisprudence and
Hygiene. |
| 3. Therapeutics. | |
| 4. Pathology. | |

Fee for the *Liceat ad Examinandum*, £5.

Fee for the Degree of Bachelor in Medicine, £11.

Examinations will be held on Nov. 22, Feb. 7, June 6, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 15 and 19; Jan. 31 and Feb. 4; May 30 and June 3, respectively.

Graduates in Arts of Dublin, Oxford, or Cambridge, whose names have been in the Medical Register for five years or upwards are exempted from the Previous Medical Examination and from the written part of the M.B. Examination.

No Candidate will be allowed in for any Examination unless he has given notice within the days specified.

The following Degrees are also conferred by the University:—

4.—*Master in Obstetric Science.*

A Master in Obstetric Science must have passed the M.B. and B.Ch. Examinations, and produce a Certificate of having attended a Summer Course in Obstetric Medicine and Surgery.^a

He is then required to pass an Examination in the following subjects:—

- | | | |
|---------------------------|--|---|
| 1. Practice of Midwifery. | | 3. Anatomy of Female Pelvis &
Elementary Embryology. |
| 2. Gynæcology. | | 4. Clinical Gynæcology. |

Fee for the Degree of Master in Obstetric Science, £5.

Notice should be given to the Registrar of the School of Physic a week before the first day of the Examination. The dates are the same as those for the B.A.O.

5.—*Master in Surgery.*

A Master in Surgery must be a Bachelor in Surgery of the University of Dublin, of not less than three years' standing, and must produce satisfactory evidence of having been engaged for not less than two years from the date of his Registration in the study or practice of his profession. He must then pass an Examination in the following subjects:—

- | | | |
|------------------------|--|---|
| 1. Clinical Surgery. | \| | 4. Surgery. |
| 2. Operative Surgery. | | 5. Surgical Anatomy (on
the dead subject). |
| 3. Surgical Pathology. | | |

And one of the following optional subjects, viz:—

1. Surgery, in one of its recognised branches, viz:—
Ophthalmic and Aural; Gynæcological; Dental.
2. Mental Disease.
3. Medical Jurisprudence and Hygiene.
4. Advanced Anatomy and Physiology.
5. Comparative Anatomy.

^a Existing Graduates in Medicine of the standing of M.D. are not required to attend this Course.

Graduates in Surgery of the University of Dublin, of not less than ten years' standing, may be recommended for the Degree of M.Ch., by the vote of the Court of Examiners, on such Examination as they shall determine. Candidates claiming this privilege must give one month's notice to the Registrar of the School, state in full their qualifications, and name the optional subject selected.

Fee for the Degree of Master in Surgery, £11.

Notice should be given to the Registrar of the School of Physic a week before the Examination begins, the optional subject selected being named at the same time. The dates are the same as those for the B.Ch.

6.—*Doctor in Medicine.*

A Doctor in Medicine must be a Bachelor in Medicine of three years' standing, or have been qualified to take the Degree of Bachelor in Medicine for three years. He must also read a Thesis publicly before the Regius Professor of Physic, or must undergo an Examination before the Regius Professor of Physic, according to Regulations to be approved by the Provost and Senior Fellows. The Regius Professor as a rule appoints 12 o'clock on the day before Commencements for hearing Theses.

Commencements will be held on Dec. 17, Feb. 22, April 21, June 30.

Fee for the Degree of Doctor in Medicine, £13.

UNIVERSITY DIPLOMAS.

Candidates for the Diplomas in Medicine, Surgery, and Obstetric Science must be matriculated in Medicine, and must have completed two years in Arts, and five years in Medical Studies.

The dates, regulations, and subjects of Examination are the same as for the Degrees, except that it is not necessary to attend the Courses of Lectures in Botany and Zoology, or to pass the Previous Medical Examination in these subjects.

A Diplomate on completing his Course in Arts, and proceeding to the Degree of B.A. may become a Bachelor, by attending the Lectures on Botany and Zoology, passing the Previous Medical Examination in those subjects, and paying the Degree Fees.

The *Liceat* fees are the same as for the Degrees.

The Fees for the Diplomas are—Medicine, £5; Surgery, £5; Obstetric Science, £1.

Each Candidate who has completed the prescribed Courses of study and passed the requisite qualifying Examinations in Medicine, Surgery, and Midwifery, will be entitled, if a

Graduate in Arts, to have conferred on him the Degrees of M.B., B.Ch., B.A.O., on payment to the Senior Proctor of the Degree Fees amounting to £17. A corresponding regulation applies to the Diplomas, the Fees for which are £11. He will also obtain from the Senior Proctor a Diploma, entitling him to be entered on the Register of Medical Practitioners under the Medical Act, 1886.

REGULATIONS FOR STUDENTS WHO MATRICULATED SINCE 1891.

The following conditions must be fulfilled in order to qualify for Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.) :—

I. The Student must be of B.A. standing, and his name must be for at least five (Academic) years on the Books of the Medical School, reckoned from the date of his Matriculation. He may carry on his Arts Course concurrently with his Medical Course, and he need not have taken his B.A. before presenting himself for his Final Medical Examination, but he cannot have the Medical Degrees conferred without the Arts Degree.

II. The following Courses must have been attended :—

[NOTE.—The Courses marked thus (*) must have been taken out before the Student can present himself for any part of the Final Examination. In addition, the Courses marked thus (†) must have been taken out before he can present himself for Section B; the Courses marked thus (‡) before he can present himself for Section C; and the Courses marked thus (§) before he can present himself for Sections D and E.

1. LECTURES.

WINTER COURSES.

* <i>Systematic Anatomy.</i>	* <i>Chemistry.</i>
* <i>Practical Anatomy (with Dissections), 1st year.</i>	† <i>Surgery.</i>
* <i>Practical Anatomy (with Dissections), 2nd year.</i>	* <i>Physiology (two Courses).</i>
* <i>Applied Anatomy (with Dissections).</i>	† <i>Practice of Medicine.</i>
	‡ <i>Midwifery.</i>
	† <i>Pathology.</i>

SUMMER COURSES.

* <i>Practical Chemistry.</i>	* <i>Materia Medica and Therapeutics.</i>
* <i>Practical Histology.</i>	† <i>Medical Jurisprudence and Hygiene.</i>
* <i>Botany.</i>	§ <i>Operative Surgery.</i>
* <i>Zoology.</i>	

TERM COURSES.

**Physics.*—Michaelmas, Hilary, and Trinity Terms.

§2. HOSPITAL ATTENDANCE.

1. Three Courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other Metropolitan Hospital recognised by the Board of Trinity College.

Students who shall have diligently attended the practice of a recognised London or Edinburgh Hospital for one year, of a recognised County Infirmary, or of a recognised Colonial Hospital, for two years previous to the commencement of their Metropolitan Medical Studies, may be allowed, on special application to the Board of Trinity College, to count the period so spent as equivalent to one year spent in a recognised Metropolitan Hospital.

§3. PRACTICAL VACCINATION.

One month's instruction in Practical Vaccination to be attended at the Vaccine Department, Local Government Board for Ireland, 45 Upper Sackville-street; at No. 1 East Dispensary, 11 Emerald-street; or, until further notice, at the Grand Canal-street Dispensary.

§4. MENTAL DISEASE.

A Certificate of attendance on a six months' course of Practical Study of Mental Disease in a recognised Institution.

†5. PRACTICAL MIDWIFERY.

A Certificate of attendance on a six months' Course of Practical Midwifery with Clinical Lectures, including not less than thirty cases.

§6. OPHTHALMIC SURGERY.

A Certificate of attendance on a three months' Course of Ophthalmic Surgery.

III. The following Examinations must be passed:—

The Previous Medical or Half M.B. Examination.

The Final Examination.

The Previous Medical Examination must be passed in all its parts before any part of the Final can be entered for, except in the case of Candidates for Diplomas.

The Regulations and Dates for the Previous Medical Examination are the same as those specified on pages 319 and 320.

The Final Examination is arranged as follows:—

FIRST PART.

SECTION A.

Applied Anatomy (Medical and Surgical), paper.

Applied Physiology, *vivâ voce*.

Jurisprudence and Hygiene, paper and *vivâ voce*.

Examinations for Section A will be held on Nov. 15, Jan. 31, May 31, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 8 and 12, Jan. 24 and 28, May 23 and 27, respectively.

SECTION B.

Materia Medica and Therapeutics, paper and *vivâ voce*.

Medicine, paper and *vivâ voce*.

Surgery, paper and *vivâ voce*.

Pathology, paper and *vivâ voce*.

Examinations for Section B will be held on Nov. 22, Feb. 7, June 6, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 15 and 19, Jan. 31 and Feb. 4, May 30 and June 3, respectively.

Section A may be passed in any part of the Fourth Year, provided the corresponding Curriculum shall have been completed; Section B not before Trinity Term of the Fourth Year.

Section A must be passed before the Candidate can present himself for Examination in Section B. Both Sections must be passed at least one Term before the Candidate can present himself for Examination in Sections C, D, or E.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for Section A.

No Candidate will be allowed in for any Examination unless he has given notice within the days specified.

SECOND PART.

SECTION C.

Midwifery, paper and *vivâ voce*.

Gynæcology, paper and *vivâ voce*.

Obstetrical Anatomy, paper.

Examinations for Section C will be held on Nov. 15, Jan. 31, May 31, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 8 and 12, Jan. 24 and 28, May 23 and 27, respectively.

SECTION D.

Clinical Medicine.

Mental Disease.

Examinations for Section D will be held on Nov. 22, Feb. 7, June 6, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 15 and 19, Jan. 31 and Feb. 4, May 30 and June 3, respectively.

SECTION E.

Clinical Surgery.

Operations.

Ophthalmic Surgery.

Examinations for Section E will be held on Nov. 29, Feb. 14, June 13, and following days. Notice must be given to the Registrar of the School of Physic between Nov. 22 and 26, Feb. 7 and 11, June 6 and 10, respectively.

One Section of the Second Part must be passed in Trinity Term of the Fifth Year, or subsequently. The other two may be passed in any Term of the Fifth Year, provided the corresponding Curriculum shall have been completed. Subject to this provision the Sections may be taken in any order.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for the Section for which he first presents himself.

The Candidate must also produce Certificates of attendance at the Hospitals where the Courses prescribed for each Section are to be taken out.

No Candidate will be allowed in for any Examination unless he has given notice within the days specified.

QUALIFICATION IN STATE MEDICINE.

The Diploma in State Medicine is conferred, after examination, by the University of Dublin, upon Candidates fulfilling the following conditions:—

1. The Candidate must be a Doctor in Medicine, or Graduate in Medicine and Surgery, of Dublin, Oxford, or Cambridge.

2. The name of the Candidate must have been on the Medical Register at least twelve months before the Examination.

3. The Candidate must have completed, subsequent to Registration, six months in a Laboratory, recognised by the Provost and Senior Fellows, in practical instruction in Chemistry and Bacteriology applied to Public Health, and also have attended, practically, outdoor Sanitary work for six months, under an approved Officer of Health.^a

^a This condition does not apply to Practitioners registered, or entitled to be registered, on or before 1st January, 1890.

The Examination to be passed by the Candidate is prescribed as follows:—

EXAMINATION FOR DIPLOMA IN STATE MEDICINE.

STATE MEDICINE AND HYGIENE.—*Examination by Paper.*

Time, 2 hours.

CHEMISTRY.—*Examination by Paper, and in Laboratory.*

Time, 1½ hour each.

PHYSICS AND METEOROLOGY.—*Examination vivâ voce.*

ENGINEERING.—*Examination by Paper. Time, 1½ hour.*

SANITARY ENGINEERING.—*Practical Examination.*

MORBID ANATOMY.—*Examination vivâ voce.*

PRACTICAL BACTERIOLOGY.

EPIDEMIOLOGY AND WORK AND DUTIES OF A PUBLIC OFFICER OF HEALTH.

VITAL STATISTICS.—*Examination by Paper. Time, 1½ hour.*

MEDICAL JURISPRUDENCE.—*Examination vivâ voce.*

LAW.—*Examination by Paper. Time, 1½ hour.*

Candidates are required to send in their names to the Registrar of the School of Physic at least a week before the first day of Examination.

Candidates who have registered since January 1st, 1890, are required to apply to the Board of Trinity College for leave to present themselves a month before the Examination begins, and to submit at the same time Certificates of the required Courses of Study.

The Examination will begin on December 6th.

II.

ROYAL UNIVERSITY OF IRELAND.

COURSES FOR DEGREES IN MEDICINE, SURGERY, AND OBSTETRICS.

General Regulations.

The Course for these Degrees shall be of at least five Medical years' duration; but Graduates in Arts or Science who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, shall be held to have completed the first of the five years of Medical Study.

Students who commenced their Medical Studies after Jan. 1, 1892, must furnish evidence of having been registered by the Medical Council, as Students in Medicine, for at least 57 months,

before being admitted to the M.B., B.Ch., and B.A.O. Degrees Examination.

No one can be admitted to a Degree in Medicine who is not twenty-one years of age.

All Candidates for these Degrees, in addition to attending the lectures and complying with the other conditions to be from time to time prescribed, must pass the following Examinations:—

The Matriculation Examination.

The First University Examination.

The First Examination in Medicine.

The Second Examination in Medicine.

The Third Examination in Medicine.

The Examination for the M.B., B.Ch., B.A.O. Degrees.

The Course of Medical Studies shall be divided into five Periods of one Medical Year each.

When a Student has fully completed the Course of Medical Studies prescribed for any year, he may proceed with the studies assigned to the year next following, without passing the corresponding examination.

There shall be an interval of at least one Academical Year between the passing of one examination and the being admitted to the examination next subsequent. But the Senate may, under special circumstances, allow a Candidate to present himself for his following examination within a less interval.

The Senate may allow any Candidate who so desires to present himself for the Third Examination in Medicine, and for the Degrees Examination at the same Examination period, provided that an interval of three Medical years shall have elapsed from the time of passing the Second Examination in Medicine, and provided that such Candidate shall have completed the entire course of studies, &c., prescribed for the five years of the Medical curriculum.

Candidates shall furnish proper Certificates of attendance at the several Courses of Medical Instruction prescribed for the different years of the curriculum.

No such certificate will be received unless it attests a *bonâ fide* attendance at three-fourths of the whole Course. *Students are reminded that certificates of attendance at Night Lectures will not be accepted.*

No Certificates of instruction in any of the Courses of Medical Studies, in connection with either Lectures or Hospitals, can be received, unless issued by an Institution which has been formally recognised by the Senate.

The prescribed courses in Natural Philosophy, Chemistry, Biology, Anatomy and Physiology must be attended in Institutions provided with the appliances required for the performance by the Students of proper Experimental Courses and Practical Work in those subjects.

Where Certificates in a special department (Fever, Mental Diseases, Ophthalmology, &c.) are presented, they must be signed by the Physician or Surgeon in charge of such department.

MEDICAL CURRICULUM.

FIRST YEAR.

The First Year's course of Medical Studies consists of:—

(a.) Natural Philosophy, taught experimentally:—

Either a Six Months' Course with Lectures (illustrated experimentally) on at least three days in the week;

Or, a Three Months' Course with Lectures (illustrated experimentally) on at least five days in the week.

(b.) Chemistry, a Six Months' Systematic Course.

(c.) Biology:—

Botany, a Three Months' Course, with Lectures and Demonstrations on at least three days in the week.

Zoology, a Three Months' Course, with Lectures and Demonstrations on at least three days in the week.

(d.) Anatomy, a Six Months' Systematic Course (Optional).

(e.) Practical Anatomy (Dissections), a Six Months' Course (Optional).

The Systematic Course in Anatomy and Dissections should enable the Student to acquire a good knowledge of the bones, joints, and muscles, and such knowledge of the vessels and viscera and of the larger nerves as he may reasonably be supposed to have acquired at this period of his Medical Studies.

(f.) Practical Chemistry, a Three Months' Course (Optional).

This attendance must not be simultaneous with attendance at the Systematic Course.

SECOND YEAR.

The studies assigned to the Second Year must not be entered upon until the completion of the course assigned to the First Year; that is, until the completion of such a course of study as would qualify a candidate for admission to the First Examination in Medicine.

The Second Year's course of Medical Studies consists of:—

- | | |
|--|--|
| (a.) Anatomy, a Six Months' Systematic Course ; | } If not attended during the First Year. |
| (b.) Practical Anatomy (Dissections), a Six Months' Course ; | |
| | |

Students who in the First Year have attended the courses of Anatomy prescribed for the Second Year, may in the Second Year attend the course of Anatomy prescribed for the Third Year.

- (c.) Practical Chemistry, a Three Months' Course (if not attended during the First Year).

- (d.) Physiology, a Six Months' Systematic Course.

The Systematic Course in Physiology should enable the Student to acquire a good knowledge of Physiological Chemistry, and of the following:—Development of tissues; the Physiology of muscle, nerve-fibres, and nerve-cells (but not of the brain and spinal cord); also, the Physiology of blood, lymph, and lymphoid organs, digestion, circulation, respiration, animal heat, secretion and excretion (including the functions of the skin and kidneys). The advanced portions of the subject—*e.g.*, Embryology, the Histology and Physiology of the central nervous system and of the organs of special sense, of voice, and of reproduction—are comprised in the Advanced Systematic Course of Physiology prescribed for the Third Year.

- (e.) *Materia Medica*, Pharmacology and Therapeutics, a Three Months' Course (Optional). This subject may be studied in either the Second or Third Year of Medical Studies; but it will be included in the subjects of the Third Examination in Medicine.

- (f.) Practical Physiology and Histology (Optional). A Three Months' Laboratory Course, of at least two hours three times a week. One-third at least of the time shall be devoted to Practical Physiology, and this shall be stated explicitly in the certificate or certificates of attendance. This Course may be taken either in the Second or in the Third Year.

- (g.) Hospital Attendance.

Attendance during a *Winter* Session of Six Months, and a *Summer* Session of Three Months at a Medico-Chirurgical Hospital recognised by the University, and at the Clinical Lectures delivered therein.

THIRD YEAR.

No certificate of attendance at instruction in any of the branches of study assigned to the Third Year will be accepted, where such attendance appears to have taken place prior to the completion of the Second Year of Medical Studies, except as herein provided.

The Third Year's Course of Medical Studies consists of—

- | | |
|---|---|
| (a.) Anatomy, a Six Months' Advanced Systematic Course; | } If not attended during the Second Year. |
| (b.) Practical Anatomy (Dissections), a Six Months' Course; | |

The Course of Advanced Systematic Anatomy should be such as to enable Students to perfect their knowledge of the branches of Anatomy prescribed for the Second Examination in Medicine, and also of the whole nervous system and of the organs of sense.

- (c.) Physiology. A Six Months' Advanced Systematic Course. The Course of Physiology must be distinct from the Course in the Second Year of Medical Studies. It shall deal expressly with those parts of the subject which are not prescribed for the Second Year's Course, and shall comprise Embryology, the Histology and Physiology of the central nervous system, and of the organs of special sense, of voice, and of reproduction.
- (d.) Practical Physiology and Histology (if not attended during the Second Year).
- (e.) Any *two* of the following:—
- (i.) Medicine, a Six Months' Course.
 - (ii.) Surgery, a Six Months' Course.
 - (iii.) Midwifery, and Diseases of Women and Children.

This may be attended either as one complete course, of at least six months, embracing both branches of the subject, or as two courses of three months each, one in Midwifery, the other in Diseases of Women and Children. These two courses must not be simultaneous.

- (f.) Materia Medica, Pharmacology and Therapeutics, a Three Months' Course (if not attended during the Second Year).

- (g.) Practical Pharmacy.^a

^a All candidates must lodge certificates of having attended this course in accordance with these regulations.

A Three Months' Course, with lectures on at least two days in the week, given in a recognised School in a properly equipped Laboratory by a duly appointed Lecturer on Pharmacy. (This Course may be attended before, at the same time as, or after that on *Materia Medica*, but must be attended in the Third Year).

(h.) Hospital Attendance.

Attendance during a *Winter* Session of Six Months, and a *Summer* Session of Three Months at a General Hospital recognised by the University and at the Clinical Lectures delivered therein.

Any of the following attendances may take place at any time during the Third, Fourth, or Fifth years:—

(i.) Fever Hospital.

Attendance during a period of three consecutive months at a Fever Hospital of repute, or in the Fever Wards of a General Hospital. If the attendance takes place during a regular Winter or Summer Session, it may be reckoned as a portion of the prescribed total Hospital attendance of thirty-three months.

But neither attendance at a Fever Hospital, nor the "Personal charge" of Fever cases, can be recognised, where it takes place prior to attendance at the course of Lectures on Theory and Practice of Medicine.

(j.) Attendance on at least six *Post-mortem* Examinations.

(k.) Attendance for at least three consecutive months in a General Hospital as Clinical Clerk, and three consecutive months as Dresser; such attendances not to be simultaneous.

FOURTH YEAR.

No certificate of attendance at instruction in any of the branches of study assigned to the Fourth Year will be accepted, where such attendance appears to have taken place prior to the completion of the Third Year of Medical Studies, except as herein provided.

The Fourth Year's Course comprises the following subjects at least:—

(a.) Such of the following as may not have been attended during the Third year of Medical Studies:—

- (i.) Medicine, a Six Months' Course.
- (ii.) Surgery, a Six Months' Course.
- (iii.) Midwifery, and Diseases of Women and Children, a Six Months' Course.

(b.) Operative Surgery.

The course of instruction must be given in a recognised Medical School by a duly appointed Lecturer in Surgery. The Certificate of attendance must show that the Candidate has attended at least three-fourths of the whole period of the Course, such attendances not to be under any circumstances less than on twenty-four distinct days; and that the Candidate himself has, during such Course, performed at least four major operations on the dead subject under the direction of the Lecturer.

Printed Forms of this Certificate may be had on application.

(c.) Medical Jurisprudence, a Three Months' Course.*(d.)* Pathology, a Three Months' Systematic Course of at least two lectures per week in a recognised Medical School.

Practical Pathology, a Three Months' Laboratory Course of at least three days per week in a recognised Medical School.

These Courses may be taken simultaneously.

(e.) Ophthalmology and Otology, a Three Months' Systematic Course in a recognised Medical School. This Course may be attended either before or at the same time as, but not after, the Hospital attendance in these subjects.*(f.)* Hospital attendance.

Attendance during a *Winter* Session of Six Months and a *Summer* Session of Three Months at a General Hospital recognised by the University and at the Clinical Lectures delivered therein.

If not attended during the Third Year :—

(g.) Fever Hospital.

Attendance during a period of three consecutive months at a Fever Hospital of repute, or in the Fever Wards of a General Hospital.

(h.) Attendance on at least six *Post-mortem* Examinations.*(i.)* Attendance for at least three months in a General Hospital as Clinical Clerk, and three months as Dresser; such attendances not to be simultaneous.

FOURTH AND FIFTH YEARS.

Attendance on the remaining parts of the Medical Curriculum may take place during either the Fourth or the Fifth Year. These parts are—

(a.) Sanitary Science.

A Three Months' Systematic Course in a recognised school. This Course shall include practical demonstration on Hygienic Apparatus and Models, and visits to Institutions and Buildings where Sanitary Appliances may be inspected.

The following are the particulars of this Course:—

An elementary knowledge of—

Air.—Composition of Air; Impurities in Air; Effects of Impurities.

Ventilation.—Amount of Fresh Air required; Cubic Space; Natural Ventilation; Artificial Ventilation; Sufficiency of Ventilation.

Water.—Examination of Water; its properties and composition; Impurities; Effects of Impurities; Water Supply; Purification of Water.

Food and Dieting.—General Principles of Diet; Diseases connected with Food; Quality, Choice and Cooking of Food.

Removal and Disposal of Sewage.

Habitations and Hospitals.—Construction, Warming, Lighting.

Soils and Sites.

Clothing and Exercise.

Disposal of the Dead.

Disinfection and Deodorisation.

Climate and Meteorology.

Causation and Prevention of Disease.

Duties of Medical Officers of Health.

The More Important Sanitary Acts.

The Elements of Statistics.

(b.) Mental Diseases.

A Three Months' Course in a recognised Institution where Clinical Instruction on Mental Diseases is given.

(c.) Practical Midwifery.

Attendance for a period of six months at a recognised Midwifery Hospital containing not less than fifteen beds in regular occupation where Clinical Instruction in Midwifery and Diseases of Women and Children is given, or for six months' at a Midwifery Dispensary, recognised by the Senate, where similar Clinical Instruction is given. During this period the Candidate is required to attend at least *twenty* Labours, of

ten of which at least he must have had personal charge.

- (d.) Ophthalmology and Otology. Attendance for a period of three months at a recognised Hospital, having at least ten beds devoted to diseases of the Eye and Ear.

If not already attended:—

- (e.) Fever Hospital.

Attendance during a period of three consecutive Months at a Fever Hospital of repute, or in the Fever Wards of a General Hospital.

- (f.) Attendance on at least six complete *Post-mortem* Examinations.

- (g.) Attendance for at least three months in a General Hospital as Clinical Clerk, and three months as Dresser; such attendances not to be simultaneous.

- (h.) “Personal charge” of at least ten Fever cases.

Printed Forms of all Certificates of Personal Charge of Cases may be had on application.

N.B.—The expression *Personal Charge* implies that the student fulfils towards the case the duties commonly assigned to a Clinical Clerk.

Attendance in a Fever Hospital, or on Fever Cases, must not take place during the period of attendance on Practical Midwifery and Gynæcology.

- (i.) Vaccination.

A short course of practical instruction under a Public Vaccinator, including attendance on at least ten distinct days at a Dispensary when vaccination is being performed.

Printed Forms of this Certificate may be had on application.

FIFTH YEAR.

Hospital Attendance. Attendance during a *Winter* Session of Six Months at a recognised General Hospital, and at the Clinical Lectures delivered therein.

THE EXAMINATION FOR THE M.B., B.Ch., B.A.O. DEGREES.

Candidates may present themselves for this Examination after an interval of such period, not being less than one Medical Year from the time of passing the Third Examination in Medicine, as the Senate may from time to time prescribe, provided they shall have completed the entire Medical Curriculum.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

Each Candidate must send to the Secretaries, on or before April 5, for the Summer Examination, and September 1, for the Autumn Examination, a printed form of application for admission, accurately filled up and signed by the Candidate, together with the prescribed fee of £2.

This Examination consists of three parts:—

(a.) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology.

(b.) Surgery, Theoretical, Clinical, and Operative, including the use of Instruments and appliances; Surgical Anatomy; Ophthalmology and Otology,^a Surgical Pathology.

(c.) Midwifery and Diseases of Women and Children.

All Candidates must enter for and go through the entire Examination, but a Candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the Examiners.

Upon completing satisfactorily his Examination in all three divisions, the Candidate will receive, in addition to the parchment Diplomas recording his admission to the M.B., B.Ch., B.A.O. Degrees, a Certificate of having passed a Qualifying Examination in the subjects of Medicine, Surgery, and Midwifery.

The fee for this Certificate is *Ten Pounds*, which must be paid before admission to these Degrees.

DIPLOMA IN SANITARY SCIENCE.

This Diploma is conferred only on Graduates in Medicine of the University.

Candidates may present themselves for this Examination after an interval of twelve months from the time of obtaining the M.B., B.Ch., B.A.O. Degrees.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

Each Candidate must send to the Secretaries on or before May 31 a printed form of application for admission, accurately filled up and signed by the Candidate, together with the prescribed fee of £2.

* Candidates at this Examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope.

On satisfying the Examiners the Candidate must pay a further fee of £3 before the Diploma can be granted to him.

Every Candidate must, when entering for the Examination, produce :—^a

- (a.) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, attended during a period of six months Practical Instruction in a Laboratory approved by the University. The nature of this course is fully indicated by the detailed Syllabus of the Examinations in Physics, Climatology, Chemistry, Microscopy, Bacteriology &c. An Institution applying to be recognised as fulfilling the conditions of the Regulations in regard to the course of Practical Instruction in a Laboratory, shall be required to include in the instruction given in such Institution the various subjects set forth in this Syllabus, and special application for recognition must be made.
- (b.) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, for six months practically studied the duties of out-door Sanitary work under the Medical Officer of Health of a County or large Urban District.

The Subjects of this Examination are :—

Physics ;
 Climatology ;
 Chemistry ;
 Microscopy ;
 Bacteriology ;
 Geology ;
 Sanitary Engineering ;
 Hygiene, Sanitary Law, and Vital Statistics.

The Candidate must draw up reports on the Sanitary condition of Dwelling Houses, or other buildings selected for the purpose.

N.B.—Proficiency in practical work and an adequate acquaintance with the instruments and methods of research which may be employed for Hygienic investigations are indispensable conditions of passing the Examination.

DIPLOMA IN MENTAL DISEASES.

This Diploma is conferred only on Graduates in Medicine of the University.

Printed forms of application for admission to this Examination

^a These rules (a), (b), shall not apply to Medical Practitioners registered or entitled to be registered on or before Jan. 1, 1890.

may be had from "the Secretaries, the Royal University of Ireland, Dublin."

Each Candidate must send to the Secretaries, on or before Sept. 6, a printed form of application for admission, accurately filled up and signed by the Candidate, together with the prescribed fee of £2.

Each Candidate who satisfies the Examiners must pay a further fee of £3 before the diploma can be granted to him.

The subjects for this Examination are those prescribed for the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Disease.

BELFAST.

QUEEN'S COLLEGE.

Clinical instruction is given at the Belfast Royal Hospital. The Ulster Hospital for Diseases of Women and Children, the Belfast Maternity Hospital, the Belfast Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Belfast District Lunatic Asylum, and the Belfast Hospital for Sick Children are open to students.

A pamphlet containing full information can be had free on application to the Registrar, Queen's Collège, Belfast, or from Dr. R. L. M'Kisack, Secretary, Medical Staff, Royal Hospital.

CORK.

QUEEN'S COLLEGE.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students also can attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in-Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at Queen's College extends from October to April inclusive (thirty weeks), but the hospitals are open to students in May, June, and July also, and arrangements have been made for the delivery of some of the three months' Courses of lectures during the months of April, May and June.

GALWAY.

QUEEN'S COLLEGE.

Clinical instruction is given at the Galway County Infirmary and the Galway Town Hospital.

Prizes.—Attached are eight scholarships of the value of £25 each. The Council may award Exhibitions to matriculated students at the examinations for junior scholarship. All scholarships and exhibitions of the second, third, and fourth years may be competed for by students who have attained the requisite standing in any medical school recognised by the College Council, and have passed the Matriculation Examination in the College, or in the Royal University of Ireland.

III.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS, IRELAND.

OUTLINE MEDICAL COURSE APPLICABLE TO CANDIDATES FOR THE LICENCES OF THE ROYAL COLLEGES.

These Regulations apply to Candidates commencing Medical Study after 1st January, 1892.

1. Enter for and pass a Preliminary Examination recognised by the General Medical Council.

The Subjects are as follows:—

Fee, £2 2s. (Matriculated Pupils, R.C.S., £1 1s. See note, page 343.)	(a)	ENGLISH LANGUAGE, including Grammar and Composition.
	(b)	LATIN, including Grammar, Translation from specified authors, and Translation of easy passages not taken from such authors.
	(c)	MATHEMATICS, comprising—(a) Arithmetic, (b) Algebra, including simple Equations, (c) Geometry, the subject matter of Euclid, Books, i. ii. and iii., with easy deductions.
	(d)	ONE OF THE FOLLOWING OPTIONAL SUBJECTS: (a) Greek; (b) any Modern Language; (c) Logic.

And at once—

2. Register as a Medical Student on a form obtainable at the Royal College of Surgeons from the Registrar. No Fee.

3. Enter for and attend Courses for the First Professional Ex- amination.	Winter six months	{	Dissections	...	£5	5
			Chemistry	...	3	3
			Physics	...	3	3
	Summer three months	{	Practical Chemistry		5	5
			Pharmacy	...	3	3
			Biology	...	3	3
						<hr/>
			£23	2		

4. Enter for and pass the First Professional Examination.

SUBJECTS OF EXAMINATION.

Fee, £15 15s.	1. (a) CHEMISTRY; (b) PHYSICS.
(Matriculated Pupils,	2. PRACTICAL PHARMACY.
R.C.S., £10 10s. See note,	3. ELEMENTARY BIOLOGY.
page 343).	4. ANATOMY, viz.—Bones, with attachments of muscles and ligaments—Joints.

Candidates may take this Examination as a whole at one time, or in four parts, but no portion earlier than the end of the first Winter Session.

5. Enter for and attend Courses for the Second Professional Examination.	Winter six months	{ Hospital (9 months)	£12	12
		{ Anatomy	... 3	3
		{ Dissections	... 5	5
	Summer three months	{ Physiology	... 3	3
		{ Histology	... 5	5
		{ Materia Medica	... 3	3
			<hr/> £32 11	


Materia Medica may be deferred to the Third Year.

6. Enter for and pass the Second Professional Examination.

SUBJECTS OF EXAMINATION.

Fee, £10 10s.	1. ANATOMY.—The Anatomy of the whole Human Body.
	2. HISTOLOGY.
	3. HUMAN PHYSIOLOGY
	4. MATERIA MEDICA } if not deferred.

The Candidate must present himself, in the first instance at least, in Anatomy and Histology; if he pass in either of these subjects, he may, at the discretion of the Examiners, get credit therefor. Physiology and Materia Medica may, at the option of the Candidate, be passed at the end of the second or during the third year.

 The Lectures on Physiology must be attended before admission to any part of the Second Professional Examination.

7. Enter for and attend Courses for the Third Professional Examination.	Winter six months	Hospital (18 months ^a)	£25	4
		Dissections	...	5 5
		Medicine	...	3 3
		Surgery	...	3 3
		Midwifery	...	3 3
		Pathology	...	3 3
	Summer three months	Operative Surgery	...	5 5
		Public Health and Forensic Medicine		3 3
				£51	9

^a In addition to that attended in the Second Year, with evidence of attendance in Fever Wards.

8. Enter for and pass the Third Professional Examination.^a

SUBJECTS OF EXAMINATION.

Fee, £9 9s.	{	1. MEDICINE.
		2. SURGERY.
		3. PATHOLOGY.
		4. THERAPEUTICS.
		5. PUBLIC HEALTH AND FORENSIC MEDICINE.

A Candidate must present himself, in the first instance at least, in Medicine, Surgery (including Therapeutics), and Pathology. Should he pass in either Medicine or Surgery, he shall get credit therefor, even if he has failed in other parts of the Examination.

9. Enter for and attend Courses for the Final Examination.	{	Maternity Hospital, ^b £6 6s.,		
		£8 8s., or	...	£10 10
		Ophthalmic Certificate	...	3 3
		Vaccination ^b	...	1 1
		Clinical Instruction in		
		Mental Diseases ^b	...	3 3
			<hr/>	
				£17 17

10. Enter for and pass the Final Examination.

SUBJECTS OF EXAMINATION.

Fee, £6 6s.	{	1. MEDICINE, including MEDICAL ANATOMY and MENTAL DISEASES.
		2. SURGERY.
		3. OPERATIVE SURGERY and SURGICAL ANATOMY.
		4. OPHTHALMIC and AURAL SURGERY.
		5. MIDWIFERY, including DISEASES OF WOMEN and NEW-BORN CHILDREN, and the THEORY and PRACTICE OF VACCINATION.

Every Candidate must produce evidence that he has acted as Medical Clinical Clerk for three months, and as Surgical Dresser for three months.

Candidates are not admissible to the Final Examination earlier than the end of the Fifth Year of Medical Study.

Candidates may enter for and pass separately in Medicine, Surgery, and Midwifery.

Colonial Candidates who have taken out a portion of the Course, or have passed Examinations in Australia and elsewhere, have been accorded certain exemptions, which may be learned on application to the Secretary of the Committee of Management.

^a This examination cannot be taken earlier than the end of the Fourth Winter Session.

^b May be taken in the Fourth Year.

MARKING.

(a) A numerical system of marks, ranging from 0 to 10, is now in use.

(b.) A uniform standard of 50 per cent. is the passing mark in all subjects, and in all examinations.

(c.) In deciding as to whether a candidate has passed in any subject or not, the marks in all the divisions of the subject—written, oral, and practical—are considered together; provided, however, that bad answering in the clinical portion shall not be compensated for by excellence in the other portions of the subject.

EXEMPTIONS.

The analogous Examinations of the various Medical Licensing Bodies are, as a rule, accepted by the Conjoint Board as equivalent to the First, Second, and Third Professional Examinations; but credit will not, save in special cases, be given for separate subjects in which the Candidate has passed elsewhere.

The Entrance Examinations of the Universities, Intermediate Examinations, and Examinations of the College of Preceptors, or other Examinations in General Education recognised by the General Medical Council, are accepted in lieu of the Preliminary Examinations of the Colleges.

Lists of the Examinations which have been already accepted, and the value attached to them, are given in the Conjoint Regulations.

Candidates are referred for detailed information to the Official Regulations published by the Colleges.

MATRICULATION AS PUPIL OF THE ROYAL COLLEGE OF SURGEONS.

All persons proceeding to the study of Medicine may, if approved by the Council, become matriculated pupils of the College on payment of five guineas, and having done so, will enjoy the following privileges:—

1. They will, if matriculated before the preliminary examination, be admitted on payment of £1 1s. (half fee).

2. They will be permitted to study in the Library and Museums of the College.

3. Their fee for the First Professional Examination will be reduced by £5 5s.

We are indebted to *The Lancet*, August 21, 1897, for the following Table, which we have revised and corrected in some minor points:—

Tabular List of the Classes, Lecturers, and Fees at the

LECTURES, &c.	DUBLIN UNIVERSITY	DUBLIN. R. C. OF SURGEONS		DUBLIN. CATHOLIC UNIVERSITY	
	Lecturers	Lecturers	Fees	Lecturers	Fees
Histology and Physiology	..	Prof. Scott	Course, £3 3s., in all Classes, ex. Descri. Anat. (£5 5s.), Oper. Surg. (£5 5s.), Pract. Chem. (£5 5s.), Pract. Histology (£5 5s.)	Dr. Coppinger and Dr. Coffey † Dr. Birmingham	
Anatomy, Descriptive and Surgical	Dr. Cunningham	Prof. Fraser			
Practical Anatomy and Dissections	Dr. Cunningham	Prof. Fraser		Dr. Birmingham, † assisted by Drs. Fagan and Dempsey	
Chemistry - - -	Dr. Reynolds	} Profs. Sir C. Cameron and Lapper		{ Dr. Campbell, assisted by Dr. Frengley	
Practical Chemistry	Dr. Reynolds				
Materia Medica and Pharmacy	Dr. W. G. Smith	Prof. Sir G. F. Duffey		Dr. Quinlan*	
Botany and Zoology -	Dr. Wright Prof. Mackintosh	Profs. Minchin and Cosgrave §		Dr. Sigerson † and Dr. Blaney	
Institutes of Medicine and Pathology	Dr. Purser	..		Dr. McWeeney	
Natural Philosophy -	Prof. FitzGerald	..		Prof. Stewart †	
Hospital Practice -	Sir P. Dun's or other Dublin Hospital	The various Dublin Hospitals		The various Dublin Hospitals	
Clinical Lectures -	..	..		..
Surgery - - -	Dr. E. H. Bennett	} Profs. Sir W. Stokes and W. Stoker		Mr. P. J. Hayes and Mr. McArdle	
Operative Surgery -	..				
Midwifery, &c. - -	Dr. A. V. Macan	Prof. S. R. Mason		Dr. A. J. Smith	
Medicine - - -	Dr. Finny	Prof. J. W. Moore		Sir C. J. Nixon	
Medical Jurisprudence -	Dr. Bewley	Prof. Auchinleck		Mr. Roche	
Comparative Anatomy -	Prof. Mackintosh	..		Dr. Sigerson and Dr. Blaney †	
Practical Pharmacy -	Dr. W. G. Smith	Prof. Sir G. F. Duffey		Dr. Quinlan	
Logic - - -	The College Tutors	..			
Physics - - -	..	Prof. Lapper		[Medical Registrar: Dr. Birmingham] Prof. Stewart †	
Pathology - - -	Mr. O'Sullivan	..		Dr. McWeeney	
Ophthalmology and Otology	..	Profs. Jacob, Fitzgerald, and Story		Dr. Werner	
Hygiene - - -	Dr. Bewley	Sir Charles Cameron		Mr. Roche	

* In Summer.

† In Winter and in Summer.

Medical Schools of Ireland for the Session 1897-98.

BELFAST QUEEN'S COLLEGE		CORK ¹ QUEEN'S COLLEGE		GALWAY QUEEN'S COLLEGE	
Lecturers	Fees	Lecturers	Fees	Lecturers	Fees
	First Course		First Course		First Course
	£ s.		£ s.		£ s.
Dr. W. H. Thompson	3 0	Dr. J. J. Charles	3 0	Dr. Pye	3 0
Dr. J. Symington	2 0		..	Dr. Pye	2 0
Dr. Symington and Demonstrators	3 0	Dr. Charles and Demonstrators	3 0	Dr. Pye and Demonstrators.	3 0
Dr. Letts	2 0	Dr. Augustus E. Dixon	2 0	Dr. Senier	2 0
Dr. Letts†	3 0	Dr. Augustus E. Dixon	3 0	Dr. Senier	3 0
Dr. W. Whitla	2 0	Dr. C. Y. Pearson	2 0	Dr. Colahan	2 0
Dr. R. O. Cunningham†	2 0	Professor Hartog	2 0 each	Dr. R. J. Anderson	2 0
..	..	..	..	Dr. Lynham	2 0
Prof. W. B. Morton	2 0	Mr. William Bergin	2 0	Professor Anderson	2 0
Belfast Royal and other Hospitals	..	North and South Infirmarys	..	Galway Hospital, Galway Union Hospital, and Galway Fever Hospital	Sess. 5 0
..	..	..	..	Drs. Kinkead, Pye, Brereton, Colahan, and Lynham	..
Dr. Sinclair	2 0	Dr. S. O'Sullivan	2 0	Dr. W. Brereton	2 0
Dr. Sinclair*	2 0	Dr. S. O'Sullivan	2 0	..	..
Dr. J. W. Byers	2 0	Dr. Corby	2 0	Dr. Kinkead	2 0
Dr. Cuming	2 0	..	2 0	Dr. Lynham	2 0
Dr. Hodges	2 0	Dr. C. Yelverton Pearson	2 0	Dr. Senier } Dr. Kinkead }	2 0
..	..	..	..	[Modern Languages: Professor Steinberger]	..
Dr. V. G. L. Fielden	2 0	Dr. C. Yelverton Pearson	..	..	2 0
Professor J. Park	2 0	Professor Stokes	1 0	Sir T. W. Moffett	2 0
..
Dr. J. Lorrain-Smith	2 0	Dr. Cotter	2 0	Dr. Lynham	2 0
Dr. W. A. M'Keown	2 0	Dr. Sandford	..	..	..
Dr. E. A. Letts and Dr. Henry Whitaker	2 0	Dr. Donovan	..	..	..

† Zoology in Winter ; Botany in Summer.

§ Including Biology.

DATES OF CONJOINT EXAMINATIONS.

Preliminary	-	-	-	March and September.
Professional	-	-	-	April, July, and October.

Fees for Courses of Study payable in the Dublin Schools and Hospitals for the Conjoint Examinations of the Royal Colleges of Physicians and Surgeons, Ireland:—

				£	s.
Three Courses Demonstrations and Dissections at £5 5s.				15	15
One Course Anatomical Lectures	-	-	-	3	3
„ „ Lectures on Physiology	-	-	-	3	3
„ „ Surgery	-	-	-	3	3
„ „ Theoretical Chemistry	-	-	-	3	3
„ „ Materia Medica	-	-	-	3	3
„ „ Practice of Medicine	-	-	-	3	3
„ „ Midwifery	-	-	-	3	3
„ „ Pathology	-	-	-	3	3
„ „ Physics	-	-	-	3	3
„ „ Practical Histology	-	-	-	5	5
„ „ Operative Surgery	-	-	-	5	5
„ „ Practical Chemistry	-	-	-	5	5
„ „ Public Health and Forensic Medicine	-	-	-	3	3
„ „ Practical Pharmacy	-	-	-	3	3
„ „ Biology	-	-	-	3	3
Total Fees for Lectures	-	-	-	£69	6
Fees for 27 months' Medico-Chirurgical Hospital attendance				37	16
Six months' Midwifery Hospital	£6 6s.,	£8 8s.,	or	10	10
Three months' Ophthalmic Hospital	-	-	-	3	3
Three months' Mental Diseases	-	-	-	3	3
Vaccination	-	-	-	1	1
Total	-	-	-	£124	19

EXAMINATION FEES.

				For L. & L.M., R.C.P.I., and L. and L.M., R.C.S.I.
First Professional Examination	-	-	-	£15 15 0
Second Professional Examination	-	-	-	10 10 0
Third Professional Examination	-	-	-	9 9 0
Final Professional Examination	-	-	-	6 6 0
Total	-	-	-	£42 0 0

REGULATIONS FOR CANDIDATES FOR THE CONJOINT
DIPLOMA IN STATE MEDICINE.

The following regulations are compulsory on all Candidates beginning the study of Sanitary Science after January 1st, 1894; the date of commencement of study being fixed by the date of the certificates.

Stated Examinations for the Diploma in State Medicine commence on the first Tuesday of the months of February, May, and November, and occupy four days.

A special Examination for the Diploma can be obtained—except in the months of August and September—on payment of £5 5s., in addition to the ordinary Fees mentioned below, and on giving notice at least one fortnight before the date of the proposed Examination.

Every Candidate for the Diploma in State Medicine must be a Registered Medical Practitioner. He must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, Dublin, three weeks before the Examination, and lodge with him a Testimonial of Character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh, together with certificates of study as hereinafter set forth.

Candidates registered as Medical Practitioners or entitled to be so registered after 1st January, 1890, must comply with the following Resolutions passed by the General Medical Council on December 1st, 1893, in regard to Diplomas in State Medicine:—

“(a) This Council, having regard to the terms of Section 18 of the Local Government Act, 1888, and observing that under that section special privilege is to be accorded to the holders of the Diplomas granted under Section 21 of the Medical Act (1886), and therein described as Diplomas in Sanitary Science, Public Health, or State Medicine, thinks it essential to declare, with regard to its own future action under Section 21 of the Medical Act (1886), that it will not consider Diplomas to ‘deserve recognition in the *Medical Register*’ unless they have been granted under such conditions of education and examination as to insure (in the judgment of the Council) the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the Public Health; and that the Council, in forming its judgment on the conditions of education and examination, will expect the following rules to have been observed:—

“(b) A period of not less than twelve months shall elapse between the attainment of a first registrable qualification in Medi-

cine, Surgery, and Midwifery, and the admission of the Candidate to any examination, or any part thereof, for a Diploma in Sanitary Science, Public Health, or State Medicine.

“(c) Every Candidate shall have produced evidence of having, after obtaining a registrable qualification, attended during six months’ practical instruction in a Laboratory or Laboratories, British or Foreign, approved by the Body granting the Diploma, in which Chemistry, Bacteriology, and the Pathology of the Diseases of Animals transmissible to Man are taught.

“(d) Every Candidate shall have produced evidence that, during a period of six months after obtaining a registrable Qualification, he has either practically studied the duties of outdoor sanitary work, under the Medical Officer of Health of a County or large Urban District, or else has himself held an appointment as Medical Officer of Health under conditions not requiring the possession of a Special Sanitary Diploma. The Certificate of an Assistant Officer of Health of a County or a large Urban District may be accepted, provided the Medical Officer of Health of the County or District consents to the Assistant Officer giving such instruction.

“(e.) Every Candidate shall have produced evidence that he has attended the Clinical Practice of a Hospital for Infectious Diseases recognised by one of the Licensing Bodies; provided that such a course of instruction may have been taken as part of the Curriculum, for his registrable Qualification in Medicine, Surgery, and Midwifery.

“(f) The Examination shall have been conducted by Examiners specially qualified; it shall have extended over not less than four days, one of which shall have been devoted to practical work in a Laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a Medical Officer of Health.”

* * * The *Rules* as to study shall not apply to—

“(a) Medical Practitioners registered, or entitled to be registered, on or before January 1, 1890:

“(β) Registered Medical Practitioners who have for a period of three years held the position of Medical Officer of Health of any County, or to any Urban District of more than 20,000 inhabitants, or to any entire Rural Sanitary District.”

These *Rules* shall apply to all Diplomas granted after January 1, 1894, provided that the *Rules* passed by the Council on June 1, 1889, and November 25th, 1890, shall continue to apply

to Candidates who had commenced special study in Sanitary Science prior to January 1, 1894.

* * * The Executive Committee [of the General Medical Council] has power, in special cases, to admit exceptions to the Rules for the Registration of Diplomas in Sanitary Science, and report the same to the General Council.

The Fee for the Examination is Ten Guineas, which must be lodged in the Ulster Bank, Dublin, to the credit of the Committee of Management, at least two weeks before the date fixed for the Examination. Fees are not returned to any Candidate who withdraws from, or is rejected at, any Examination. The Fee for re-examination is Five Guineas.

The Examination for the Diploma in State Medicine comprises the following subjects:—State Medicine and Hygiene, Chemistry, Meteorology, and Climatology, Engineering, Morbid Anatomy, Vital Statistics, Medical Jurisprudence, Law.

IV.

APOTHECARIES' HALL IN IRELAND.

The First, Second, and Third Professional Examinations are held four times a year—viz., commencing the third Monday in January, April, July, and October.

The final Examinations are held in January and July.

The Fees payable for each Examination are as follows:—

First Professional	-	-	£5	5	0
Second „	-	-	5	5	0
Third „	-	-	5	5	0
Final Examination	-	-	6	6	0

Fees are not returned to any Candidate who withdraws from, or is rejected at, any Examination. If a Candidate gives three clear days' notice of inability to attend, he may present himself at the remaining Examination without any further fee.

A Candidate is allowed for each Professional Examination which he has completed at any other Licensing Body, except the Final. If he has passed only in some of the subjects in a given Examination, he has to pay the whole of the fee for that Examination. The fees for re-examination are

For each subject	-	-	£1	1	0
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excepting in the subjects of Chemistry, Pharmacy, Surgery, and Medicine, the fees for which are £2 2s. each.

The fee for Final alone	-	-	£15	15	0
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When the other Examinations have been taken elsewhere.

Ladies who comply with the regulations will be admitted to these examinations.

Candidates may be admitted to a Special Examination, under special circumstances, which must be laid before the Examination Committee. If the Candidate's application be granted, an extra fee of Ten Guineas over and above the full fee is required.

Candidates already on the Register will receive the Diploma of the Hall, on passing an Examination in the subjects which are not covered by their previous qualifications, and on paying a fee of Ten Guineas. If Medicine or Surgery is required, Two Guineas extra will be charged.

All examination Fees are to be lodged in the Sackville-street Branch of the Royal Bank of Ireland, to the credit of the Examination Committee. Applications and Schedules, together with Bank Receipt for the fee, must be lodged with the Registrar, Apothecaries' Hall, 40 Mary-street, Dublin, fourteen clear days before the first day of Examination.

COURSE OF STUDY FOR THE DIPLOMA.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must, before proceeding to the Final Examination, produce evidence of having been registered as a Medical Student for 57 months; also of having attended Courses of Instruction as follows:—

Winter Courses of Six Months.

One Course each of the following:—

Anatomy (Lecture).

Chemistry—Theoretical.

Midwifery.

Practice of Medicine.

Physiology, or Institutes of Medicine.

Surgery.

Dissections, two courses of six months each.

Courses of Three Months.

One Course of each of the following:—

Materia Medica.

Medical Jurisprudence.

Chemistry—Practical.

Practical Physiology and Histology.

Operative Surgery.

Physics.

Clinical Ophthalmology.

Biology.

Clinical Instruction in Mental Disease.

Pathology.

Vaccination.

Medico-Chirurgical Hospital, twenty-seven months, to be distributed at the Student's own discretion over the last four years of his study. The Candidate may substitute for nine months in this Hospital Attendance six months as a Resident Pupil. He will be required to present a certificate of having taken notes of at least six Medical and six Surgical cases recorded under the supervision, respectively, of a Physician and Surgeon of his Hospital.

Three months' study of Fever—which may be included in his twenty-seven months' Hospital Attendance—in a Hospital containing Fever Wards, and having taken notes of five cases of Fever—viz., either Typhus, Typhoid, Scarlet Fever, Small-pox or Measles.

Six months' Practical Midwifery and Diseases of Women during the Winter or Summer of the third or the fourth year, at a recognised Lying-in Hospital, or Maternity.

Three months' Practical Pharmacy, in a recognised Clinical Hospital or a recognised School of Pharmacy, or a year in the Compounding Department of a Licentiate Apothecary or a Pharmaceutical Chemist.

Each Candidate, before receiving his Diploma, must produce evidence that he has attained the age of twenty-one years.

EXAMINATIONS FOR THE DIPLOMA.

All information relative to the Examinations may be obtained from the Registrar of the Apothecaries' Hall, 40 Mary-street, Dublin, who will receive the applications of Candidates, and with whom the Bank receipt for lodgment of fees, together with all certificates, must be lodged at least fourteen days prior to the day fixed for the commencement of the Examination for the class to which each Candidate belongs.

DENTAL EDUCATION AND EXAMINATIONS IN IRELAND.^a

The Royal College of Surgeons in Ireland grants Diplomas in Dental Surgery under conditions of which the following is a synopsis:—

* Fuller particulars can be obtained by application to the Registrar, Royal College of Surgeons, St. Stephen's-green, Dublin.

The Candidate must be twenty-one years of age.

The Candidate must have passed three Examinations.

1. Preliminary (identical with the Medical Preliminary).
2. Primary Dental. Fee, £10 10s. (This Examination is much the same as the Second Conjoint Professional.)
3. Final Dental Examination. Fee, £10 10s. Candidates are examined in Dental Surgery and Pathology, and in Mechanical Dentistry and Practical Metallurgy.

Candidates are required to do gold fillings, and construct mechanical work in the presence of the Examiners.

The Certificate required may be divided into General and Special.

1. The General Certificates required are about the same as those required by the Medical Student for the Second Conjoint Professional Examination.

The Special Certificates may be subdivided into—

1. Dental Hospital. 2. Practical Mechanical Dentistry.
1. Dental Hospital. Two years' attendance, with Lectures in Dental Surgery and Pathology and in Mechanical Dentistry and Orthodonty. Fee, £28 7s.
2. Practical Mechanical Dentistry. Three years' instruction from a Registered Dentist. The fee for this is variable, but may be set down at from £50 to £150.

Large reductions in the Special Certificates required are made in the cases of qualified Medical Practitioners.

GALACTOGOGUES.

DR. GRINEWITCH has been making a study of the drugs which increase the flow of milk without in any way injuring the quality of it. He finds that the most efficient of them is a plant which is practically unknown in medicine—the common goat's rue (*Galega officinalis*). He gives a drachm of the tincture about five times a day. The next drug in the scale is the common stinging nettle, of which he gives from two hundred and fifty to five hundred drops of the tincture daily.—*Med. Rec.*

NEW YORK POST-GRADUATE SCHOOL.

FROM the Supplementary Number of the New York *Post-Graduate* we learn that the School, now in its fourteenth year, is doing excellent work—4,379 students have matriculated, and 550 attended the courses in the past year. It teaches clinically and by demonstrations; there are no “lectures.” The fees for all the courses and clinics of School and Hospital (with certain specified exceptions, which are “extras”), are £30 for twelve weeks; £20 for six.

MEDICAL AID ASSOCIATIONS.

TO THE EDITOR OF THE DUBLIN MEDICAL JOURNAL.

SIR,—At a recent meeting of the Great Yarmouth District Committee of the Incorporated Medical Practitioners' Association it was decided to send a memorial to every licensing body in the United Kingdom, calling attention to the evils and abuses at present existing in connection with the administration of many Clubs and Medical Aid Societies, and if possible to procure an expression of opinion from the licensing bodies on the conduct of those of their graduates or diplomates who, by holding appointments under such clubs or societies, aid, abet, and perpetuate the abuses and evils which exist in connection therewith.

I herewith enclose a copy of the memorial which is now in the hands of the Secretaries of each of the twenty licensing bodies, and which will be brought before their next meeting of Senate or Council.

We feel convinced that only by repeated and extended agitation will the General Medical Council be induced to legislate in anything like accordance with the views expressed in this memorial; and we now ask you, Sir (together with the editors of other influential professional organs), to afford us your valuable assistance by publishing in your next issue this letter and memorial, and thus bringing the matter before the profession, and especially to the cognisance of Societies akin to our own, and so leading to their co-operation and possibly to the adoption by them of measures calculated to bring forcibly to the notice of the licensing and governing bodies the abuses now obtaining in connection with Medical Aid Societies, Clubs, and Hospitals.

I am, Sir,

Your obedient servant,

W. E. WYLLYS, *Hon. Sec.*,

Gt. Yarmouth District Committee, I.M.P.A.

Great Yarmouth,

10th September, 1897.

MEMORIAL.

TO THE SENATE [COUNCIL] OF THE ———

WE, the undersigned—being, with one exception, all the registered medical men engaged in private practice in Great

Yarmouth—beg leave to bring the following facts under the notice of your Senate [Council], as the governing body of one of the corporations entitled under the Medical Acts to grant degrees, [diplomas], qualifying their holders to practise Medicine, Surgery, and Midwifery in the United Kingdom:—

1. In Great Yarmouth, as in other districts of the United Kingdom, certain grave abuses have grown up of late years in connection with the systems of “Medical Aid” for the working classes organised by the Friendly Societies and by certain Industrial Life Assurance Companies, and other lay associations.

The principal abuses referred to are—

- (a.) The admission of persons not needing such assistance to medical benefits intended primarily for the relief of the poorer classes.
- (b.) The admission of women and children to these benefits at entirely inadequate rates of payment for the medical officer.
- (c.) Specially in the case of Industrial Assurance and similar Societies a system of indiscriminate canvassing whereby the private patients of other medical men are solicited—directly for the Company—indirectly for its medical officer.
- (d.) The conduct of medical practice by lay organisations purely as a commercial speculation, this being most flagrant where, as in some cases, the medical officer receives a fixed salary; and beyond this amount the fees accruing from his work are appropriated as the profits of his non-medical employers.

2. For the purpose of checking these and similar abuses all but one of the medical practitioners residing in Great Yarmouth combined, and as one result of their Association a joint request was made to the Friendly Societies for a conference with a view to an amicable adjustment of the matters in question, but with few exceptions the Friendly Societies absolutely refused this request, dismissed their Medical Officers, and proceeded to form a Medical Institute in the constitution of which all the above abuses are maintained and even increased.

3. The posts of Medical Officers to this Institute were advertised in the lay press, and as a result, notwithstanding the condemnation of such methods of practice by the Medical Journals, and by the general voice of the profession, and in spite also of the fact that those accepting these appointments must knowingly,

wilfully, and openly assume the position of assisting a certain section of the public to defeat the local medical men in a matter involving the vital interests of the profession, qualified medical men were, we regret to say, found willing to take these posts.

4. One of our members had previously acted as the Medical Officer of an Industrial Assurance Company offering "Medical Aid" as an attraction to its insurers, paying its Medical Officer a fixed salary, and canvassing for patients from door to door. This office he has resigned, but in the absence of any declaration as to these appointments by the General Medical Council, or by the Universities and Colleges granting medical qualifications, the Company has, we believe, easily found a substitute.

5. Such facts as we have recited can be quite paralleled in the experience of other towns and districts of the United Kingdom, and appear to us to call for the careful attention of the various governing bodies entrusted with the granting of medical qualifications and with the control of those qualified.

That dignity and independence which are essential to the adequate discharge by medical men of their duties to the public are gravely imperilled by these abuses. In particular (*a*) canvassing by lay bodies on behalf of medical men employed by them is plainly contrary to the first principles underlying proper professional relations, and appointments depending on such canvassing ought not to be permitted to be held by registered medical practitioners; (*b*) it is impossible for a medical man, acting under the control and direction, and entirely subservient to the pecuniary interests of a purely trading company which traffics in medical attendance, to satisfactorily perform the duties of a medical practitioner; whilst (*c*) the unchecked extension of the club system to all classes of society threatens a general conversion of medical practice from the basis of private relation to that of public contract, a conversion which we think the medical profession should resist with all its strength, not more in its own interest than in that of the public.

We, therefore, beg leave to submit the following questions to the consideration of your Senate [Council]:—

(*a*) Is the holding of appointments such as are herein described compatible with the conditions under which your degree [diploma] is granted and held?

(*b*) If the holding of such appointments by your graduates [diplomates] does not contravene the existing regulations, does not your Senate [Council] consider that, in the

interests of the medical profession and of the public, by-laws forbidding such practice should be adopted?

- (c) Is not your Senate [Council] of opinion that for a medical man to hold such appointments should be declared by the General Medical Council to be conduct infamous in a professional respect, and if so, will your Senate [Council] instruct its representative on the General Medical Council to support such a declaration?

(Signed)

Henry Blake, M.B. Lond.

Thomas Lettis, M.R.C.S. Eng. ; L.S.A. Lond.

A. C. Mayo, M.R.C.S. and L.S.A. Lond.

A. H. Meadows, M.R.C.S. Eng. ; L.R.C.P. Lond.

Thos. Hy. Moxon, M.R.C.S. Eng., L.S.A.

Alban H. Moxon, M.R.C.S., L.S.A.

Charles O'Farrell, L.R.C.P., L.R.C.S., Edin.

James Ryley, M.D. Lond. ; M.R.C.S. Eng.

Raymond H. Shaw, M.S., M.B., Durham.

John Benj. Nicholson Vickers, L.R.C.P. Lond., M.R.C.S.E.

J. Smith Whitaker, M.R.C.S. Eng., L.R.C.P. Lond.

R. Wrigley, M.R.C.S. Eng., L.S.A.

W. E. Wyllys, L.R.C.P., L.R.C.S. Edin.

Wm. Wyllys, M.R.C.S.E., L.R.C.P., L.S.A. Lond.

Leonard Youatt, M.B., Ch.B., D.P.H. Vict.

PROFESSIONAL SECRECY.

WE find the following curious case in the *Gazette Médicale de Paris* :—" Dr. C. having given professional attendance to a young lady, who had been put under his care by M. D., and being unable to extract his fees from M. D., wrote to Madame D. informing her of the circumstances, and urging her to pay his bill if she wished to avoid the publicity of legal proceedings. She took no notice, and the doctor sued for 420 francs. The court decided that he should get his fees, which, however, it reduced to 300 francs. But M. D. sued the doctor for 5,000 francs, damages for 'breach of professional secrecy and serious failure in the duty of a physician,' and recovered the 300 francs which he had just been condemned to pay. Costs were equally divided between the parties."

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl. ;

F.R.C.P.I. ; F. R. Met. Soc. ;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four weeks ending Saturday, September 11, 1897.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Aug. 21	Aug. 28	Sept. 4	Sept. 11		Aug. 21	Aug. 28	Sept. 4	Sept 11
Armagh -	7·0	14·0	35·1	35·1	Lisburn -	17·0	8·5	8·5	17·0
Ballymena	5·6	16·9	11·3	23·2	Londonderry	37·7	23·3	29·8	25·1
Belfast -	31·5	28·5	23·9	28 0	Lurgan -	22·8	4·6	9·1	13·7
Carrickfergus	23·4	35·1	0·0	5·8	Newry -	12·1	8·1	24·1	20·1
Clonmel -	19·5	19·5	14·6	24·4	Newtownards	11·3	11·3	11·3	22·7
Cork -	17·3	27·7	24·9	24·9	Portadown	12·4	18·6	0·0	49·5
Drogheda -	7·6	11·4	15·2	22·8	Queenstown	11·5	17·2	28·7	11·5
Dublin -	23·9	22·2	22·5	21·8	Sligo -	20·3	10·2	5·1	20·3
Dundalk -	37·7	16·8	16·8	12·6	Tralee -	5·6	11·2	16·8	22·4
Galway -	52·9	41·5	22·7	18·9	Waterford	33·8	25·9	31·8	25·9
Kilkenny -	14·2	4·7	14·2	33·0	Wexford -	22·6	36·1	27·1	22·6
Limerick -	12·6	15·4	19·6	14·0					

In the week ending Saturday, August 21, 1897, the mortality in thirty-three large English towns, including London (in which the rate was 24·2), was equal to an average annual death-rate of 28·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·6 per 1,000. In Glasgow the rate was 23·3. In Edinburgh it was 17·1.

The average annual death-rate represented by the deaths registered

during the week in the twenty-three principal town districts of Ireland was 24·9 per 1,000 of their aggregate population, which, for the purposes of this return, is estimated at 984,720.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 6·3 per 1,000, the rates varying from 0·0 in twelve of the districts to 12·6 in Londonderry—the 24 deaths from all causes registered in that district comprising 8 from diarrhoea. Among the 170 deaths from all causes registered in Belfast are 1 from measles, 3 from whooping-cough, 9 from enteric fever, and 44 from diarrhoea. The 25 deaths in Cork comprise one from each of the following—whooping-cough, diphtheria, and diarrhoea. Of the 17 deaths in Waterford 6 were from diarrhoea. Two of the 3 deaths in Newry were from measles. The 9 deaths in Dundalk comprise 2 from diarrhoea.

In the Dublin Registration District the registered births amounted to 230—124 boys and 106 girls; and the registered deaths to 163—89 males and 74 females.

The deaths, which are 8 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·3 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000. During the first thirty-three weeks of the current year the death-rate averaged 31·6, and was 4·1 over the mean rate in the corresponding period of the ten years 1887-1896.

The number of deaths from zymotic diseases registered was 43, being 14 in excess of the average for the corresponding week of the last ten years, but 10 under the number for the previous week. They comprise 1 from measles, 3 from scarlet fever (scarlatina), 1 from influenza, 2 from whooping-cough, 1 from mumps, 2 from enteric fever, 1 from simple cholera, and 31 from diarrhoea (against an average of 15 for the corresponding week of the last ten years). Of the 31 fatal cases of diarrhoea 28 were children under 5 years of age.

The number of cases of scarlatina admitted to hospital was 23, being 3 under the admissions for the preceding week. Twenty-one scarlatina patients were discharged, 2 died, and 104 remained under treatment on Saturday, being equal to the number in hospital on that day week. There were in addition 21 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Ten cases of enteric fever were admitted to hospital, as against 11 in each of the two weeks preceding. Fifteen patients were discharged, 3 died, and 53 remained under treatment on Saturday, being 8 under the number in hospital at the close of the preceding week.

The weekly number of cases of measles admitted to hospital, which had fallen from 27 in the week ended August 7 to 16 in the following week, further declined to 4. Eleven patients were discharged, and 46 remained under treatment on Saturday, being 7 under the number in hospital on that day week.

One case of typhus was admitted to hospital, and 2 cases remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered was 15, being 1 over the average for the corresponding week of the last ten years, but 2 under the number for the previous week. The 15 deaths comprise 11 from bronchitis and 3 from pneumonia.

In the week ending Saturday, August 28, the mortality in thirty-three large English towns, including London (in which the rate was 20·4), was equal to an average annual death-rate of 24·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·6 per 1,000. In Glasgow the rate was 19·7, and in Edinburgh it was 17·4.

The average annual death-rate in the twenty-three principal town districts of Ireland was 23·5 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 5·6 per 1,000, the rates varying from 0·0 in twelve of the districts to 8·3 in Belfast—the 154 deaths from all causes registered in that district comprising 8 from whooping-cough, 1 from diphtheria, 6 from enteric fever, and 30 from diarrhoea. Among the 40 deaths from all causes registered in Cork are 1 from whooping-cough, 1 from enteric fever, and 6 from diarrhoea. The 18 deaths in Londonderry comprise 4 from diarrhoea. Of the 13 deaths in Waterford 4 were from diarrhoea. The 2 deaths in Newry consist of 1 from measles and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 166—79 boys and 87 girls; and the registered deaths to 154—80 males and 74 females.

The deaths, which are 5 under the average number for the cor-

responding week of the last ten years, represent an annual rate of mortality of 23·0 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 22·2 per 1,000. During the first thirty-four weeks of the current year the death-rate averaged 31·3 and was 3·9 over the mean rate in the corresponding period of the ten years 1887-1896.

Forty-six deaths from zymotic diseases were registered, being 20 in excess of the average for the corresponding week of the last ten years, and 3 over the number for the previous week. The 46 deaths comprise 2 from scarlet fever (scarlatina), 1 from influenza, 2 from diphtheria, 3 from enteric fever, 3 from simple cholera, 31 from diarrhoea (against an average of 14 in the corresponding week of the last ten years), and 1 from dysentery. Of the 31 deaths from diarrhoea, 28 were children under 5 years of age.

The weekly number of cases of scarlatina admitted to hospital, which had fallen to 23 in the previous week, further declined to 13. Fifteen scarlatina patients were discharged, 1 died, and 101 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week. This number is exclusive of 22 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital was 10, being equal to the admissions in the preceding week. Eight patients were discharged, 1 died, and 54 remained under treatment on Saturday, being 1 over the number in hospital on that day week.

Only 3 cases of measles were admitted to hospital, being 1 below the admissions in the preceding week. Sixteen patients were discharged, and 33 remained under treatment on Saturday, being 13 under the number in hospital on that day week.

The number of deaths from diseases of the respiratory system registered was 13, being 5 below the average for the corresponding week of the last ten years, and 2 under the number for the previous week. The 13 deaths comprise 9 from bronchitis, 2 from pneumonia, and 1 from pleurisy.

In the week ending Saturday, September 4, the mortality in thirty-three large English towns, including London (in which the rate was 17·0), was equal to an average annual death-rate of 20·7 per 1,000 persons living. The average rate for eight principal towns

of Scotland was 18·1 per 1,000. In Glasgow the rate was 18·0, and in Edinburgh it was 15·1.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 22·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 4·9 per 1,000, the rates varying from 0·0 in fifteen of the districts to 11·0 in Londonderry—the 19 deaths from all causes registered in that district comprising 7 from diarrhoea. Among the 129 deaths from all causes registered in Belfast are 1 from measles, 2 from whooping-cough, 1 from simple continued fever, 9 from enteric fever, and 30 from diarrhoea. The 36 deaths in Cork comprise 2 from whooping-cough, 1 from enteric fever, and 1 from diarrhoea. The 16 deaths in Waterford comprise 3 from diarrhoea.

In the Dublin Registration District the registered births amounted to 225—120 boys and 105 girls, and the registered deaths to 155—68 males and 87 females.

The deaths, which are 11 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·1 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 22·5 per 1,000. During the first thirty-five weeks of the current year the death-rate averaged 31·1, and was 3·8 over the mean rate in the corresponding period of the ten years 1887-1896.

The number of deaths from zymotic diseases registered was 36, being 2 in excess of the average for the corresponding week of the last ten years, but 10 under the number for the previous week. The 36 deaths comprise 1 from scarlet fever (scarlatina), 3 from whooping-cough, 4 from diphtheria, 1 from infantile cholera, 1 from choleraic diarrhoea, and 25 from diarrhoea (against an average of 18 for the corresponding week of the last ten years). Of the 25 deaths from diarrhoea, 23 were of children under 5 years of age.

Nineteen cases of scarlatina were admitted to hospital, being 6 over the admissions in the preceding week, but 4 under the number admitted in the week ended August 21. Seventeen scarlatina patients were discharged, 1 died, and 102 remained under treatment on Saturday, being 1 over the number in hospital on that day week. This number does not include 21 convalescents under treatment at Beneavin, Glasnevin.

Fourteen cases of enteric fever were admitted to hospital, against 10 in each of the two weeks preceding. Fourteen patients were discharged, and 54 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week.

Only 3 cases of measles were admitted to hospital; 19 patients were discharged, and 17 remained under treatment on Saturday, being 16 under the number in hospital on that day week.

No case of typhus remained under treatment in hospital at the close of the week.

The number of deaths from diseases of the respiratory system registered is 10, being 7 below the average for the corresponding week of the last ten years, and 3 under the number for the previous week. The 10 deaths consist of 6 from bronchitis, 2 from pneumonia, 1 from laryngitis, and 1 from croup.

In the week ending Saturday, September 11, the mortality in thirty-three large English towns, including London (in which the rate was 16·4), was equal to an average annual death-rate of 19·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·3 per 1,000. In Glasgow the rate was 19·0, and in Edinburgh it was 19·9.

The average annual death-rate in the twenty-three principal town districts of Ireland was 23·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 4·7 per 1,000, the rates varying from 0·0 in fourteen of the districts to 21·0 in Armagh—the 5 deaths from all causes registered in that district comprising 1 from each of the following—whooping-cough, enteric fever and diarrhoea. Among the 151 deaths from all causes registered in Belfast are 1 from scarlatina, 6 from whooping-cough, 4 from simple continued fever, 4 from enteric fever, and 26 from diarrhoea. The 36 deaths in Cork comprise 2 from whooping-cough, 1 from diphtheria, 1 from enteric fever, and 1 from diarrhoea. Of the 16 deaths in Londonderry 4 were from diarrhoea. Four of the 13 deaths in Waterford were from the same disease. The 8 deaths in Portadown comprise 2 from measles.

In the Dublin Registration District the registered births amounted to 168—91 boys and 77 girls; and the registered deaths to 150—81 males and 69 females.

The deaths, which are 6 under the average number for the corresponding week of the last ten years, represent an annual rate of

mortality of 22·4 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 21·8 per 1,000. During the first thirty-six weeks of the current year the death-rate averaged 30·9, and was 3·7 over the mean rate in the corresponding period of the ten years 1887-1896.

The number of deaths from zymotic diseases registered was 32, being 2 in excess of the average for the corresponding week of the last ten years, but 4 under the number for the previous week. The 32 deaths comprise 2 from scarlet fever (*scarlatina*), 3 from whooping-cough, 3 from diphtheria, 4 from enteric fever, 1 from simple cholera, 15 from diarrhoea (being equal to the average for the corresponding week of the last ten years), 1 from dysentery, and 1 from erysipelas. The 15 deaths from diarrhoea were all of children under 5 years of age.

Twenty-five cases of *scarlatina* were admitted to hospital, being 6 over the number admitted in the preceding week. Nineteen *scarlatina* patients were discharged, 2 died, and 106 remained under treatment on Saturday, being 4 over the number in hospital on that day week. This number is exclusive of 23 convalescents at Beneavin, Glasnevin.

Twenty cases of enteric fever were admitted to hospital, being 6 in excess of the number admitted in the previous week. Seven patients were discharged, 6 died, and 61 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week.

Only 15 cases of measles remained under treatment in hospital on Saturday, and no cases were received.

Twenty deaths from diseases of the respiratory system were registered, being 10 over the number for the previous week, and 4 over the average for the thirty-sixth week of the last ten years. They comprise 9 from bronchitis and 8 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of August, 1897.

Mean Height of Barometer, - - -	29·708 inches.
Maximal Height of Barometer (on 2nd, 9 p.m.),	30·205 „
Minimal Height of Barometer (on 21st, 5 p.m.),	29·246 „
Mean Dry-bulb Temperature, - -	59·2°.
Mean Wet-bulb Temperature, - -	56·2°.
Mean Dew-point Temperature, - -	53·6°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·411 inch.
Mean Humidity, - - - -	82·2 per cent.
Highest Temperature in Shade (on 4th), -	76·8°.
Lowest Temperature in Shade (on 19th), -	49·2°.
Lowest Temperature on Grass (Radiation) (on 19th and 27th), - - - -	45·4°.
Mean Amount of Cloud, - - - -	55·4 per cent.
Rainfall (on 24 days), - - - -	3·788 inches.
Greatest Daily Rainfall (on 7th), - -	·901 inch.
General Directions of Wind, - - -	S., S.W., W.

Remarks.

A changeable, showery, windy month, but tolerably warm. In fact great heat prevailed during the first week, which was in all respects summerlike. During the rainy period which followed, temperature did not fall low owing to the prevalence of southerly and south-westerly winds. Thunder and lightning occurred frequently in Great Britain, to a far less extent in Ireland. The wind was often high and squally.

In Dublin the arithmetical mean temperature (60·8°) was decidedly above the average (59·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 59·2°. In the thirty-two years ending with 1896, August was coldest in 1881 (M. T. = 57·0°), and warmest in 1893 (M. T. = 63·0°). In 1895 the M. T. was 60·0°; in 1879 (the “cold year”) it was 57·7°; in 1896 it was 58·3°.

The mean height of the barometer was 29·708 inches, or 0·189 inch below the corrected average value for August—namely, 29·897 inches. The mercury marked 30·205 inches at 9 p.m. of the 2nd, and fell to 29·246 inches at 5 p.m. of the 21st. The observed range of atmospheric pressure was, therefore, ·959 inch.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 59·2°, or 1·7° above the value in August, 1896. It was 1·1° below the value for July,

1897. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* × .47), the mean temperature was 60·4°, or 1·1° above the average mean temperature for August, calculated in the same way, in the twenty-five years, 1865–89, inclusive (59·3°). The arithmetical mean of the maximal and minimal readings was 60·8°, compared with a twenty-five years' average of 59·7°. On the 4th the thermometer in the screen rose to 76·8°—wind, S.S.E.; on the 19th the temperature fell to 49·2°—wind, W. The minimum on the grass was 45·4°, on the 19th and 27th.

The rainfall was 3·788 inches, distributed over 24 days. The average rainfall for August in the twenty-five years, 1865–89, inclusive, was 2·825 inches, and the average number of rainy days was 15·5. The rainfall, therefore, and the rainy days were considerably in excess of the average. In 1874 the rainfall in August was very large—4·946 inches on 18 days; and in 1868, also, 4·745 inches fell on, however, only 13 days; but the heaviest downpour in August occurred in 1889, when 5·747 inches were registered on 22 days. On the other hand, in 1884, only .777 inch was measured on 8 days. In 1896, 1·136 inches fell on 18 days.

High winds were noted on as many as 16 days, and attained the force of a gale on three occasions in Dublin—the 17th, 26th, and 30th. Thunder occurred on the 14th, thunder and lightning on the 18th. Temperature reached 70° in the screen on 5 days—all in the first week. The morning of the 1st was foggy.

The most noteworthy feature in the weather of the week ended Saturday, the 7th, was the intensity of the heat which prevailed in most parts of western Europe—particularly in England and France. As is usual, this culminated in violent thunderstorms on Wednesday and Thursday. On both of these days the thermometer touched 90° in the shade at Cambridge—the London maxima were 88° and 87° respectively. Until Wednesday all parts of the British Islands were under the full influence of an anticyclone, or system of high atmospheric pressure. While of no great intensity, this anticyclone had much staying power, and as the winds were light and the sky comparatively free of cloud, the sun's heat had full sway and the thermometer rose higher and higher each day. On Wednesday a decided fall of the barometer occurred in the west, as a large area of low pressure moved in over Ireland from the Atlantic. The fall of the barometer went on gradually until Friday morning, when readings as low as 29·45 inches were reported from the N. and N.W. of Ireland. The wind now veered into W. from S. and a gradual but decided reduction of temperature took

place, Saturday proving a cool, cloudy, rather showery day. In Dublin the mean height of the barometer was 29·909 inches, the range being from 30·205 inches at 9 p.m. of Monday (wind, E.N.E.), to 29·541 inches at 9 a.m. of Friday (wind, S.W.). The corrected mean temperature was 64·3°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 63·2°. On Sunday the screened thermometers fell to 53·5°, on Wednesday they rose to 76·8° (the highest reading recorded this season in Dublin). The rainfall was ·911 inch, on two days, ·901 inch being measured on Saturday. Of this large amount, ·890 inch fell in a rainstorm on the morning of Sunday, August 8. The prevalent wind was S.E.

Very changeable, rainy or showery weather held during the week ended Saturday, the 14th, the rainfall being particularly heavy and frequent at the Irish and Scotch stations. In the east and south-east of England spells of fine, dry weather were enjoyed. On Sunday morning an oval-shaped depression had its centre over St. George's Channel, whence it stretched northwestwards to Connaught and southeastwards to the S.W. of England and the English Channel. From this position the system travelled eastward across England, causing very heavy rains in many places. Monday was very fine, but on Tuesday morning a new disturbance lay off the S.W. of Ireland, whence it travelled northeastwards and caused another downpour of rain in Ireland, Wales, the N. of England and Scotland. Thunderstorms broke out on Wednesday in Great Britain generally. On Friday and Saturday an area of low pressure was found off the N.W. of Ireland and W. of Scotland. This system kept the weather in a showery, squally condition to the close of the week. In Dublin the mean atmospheric pressure was 29·811 inches, the barometer falling to 29·546 inches at 9 a.m. of Sunday (wind, N.E.), and rising to 30·013 inches at 9 a.m. of Thursday (wind, W.). The corrected mean temperature was 60·3°, or 4·0° below that of the previous week. The mean dry bulb reading at 9 a.m. and 9 p.m. was 59·4°. On Monday the screened thermometers rose to 68·6°, on Thursday they sank to 51·9°. The rainfall amounted to ·837 inch on six days, ·420 inch being measured on Tuesday. The prevalent winds were S.S.W. and N.W. Thunder was heard on Saturday afternoon, when thunder, lightning, and hail were observed in the County Kildare.

Very changeable, rainy weather prevailed throughout the week ended Saturday, the 21st. A succession of primary barometric depressions of considerable size and depth passed across the N.W. of Ireland and of Scotland, while their subsidiary or secondary disturbances travelled across the more southern and central portions

of the United Kingdom. Strong S.W. to N.W. winds and frequent showers, accompanied by thunder and lightning from time to time, were the result. Temperature was also most unsteady, Wednesday night being particularly cold, while Tuesday and Friday were tolerably warm days. In the S.E. of England intervals of fine, dry, and fairly warm weather were enjoyed, but in Ireland, Wales, the greater part of England and Scotland rain fell heavily almost daily. In Dublin two showers on Wednesday yielded nearly half an inch of rain in the gauge ($\cdot 480$ inch); of these showers the second was attended with thunder and lightning. On Tuesday the wind rose to the force of a fresh gale from W.S.W. in the forenoon, but it moderated after 2 p.m., and a fine evening followed. In Dublin the mean height of the barometer was 29.584 inches, the range being from 29.838 inches at 9 a.m. of Monday (wind, W.) to 29.246 inches at 5 p.m. of Saturday (wind, W.S.W.). The corrected mean temperature was 59.1° . The mean dry bulb reading at 9 a.m. and 9 p.m. was 58.0° . On Thursday the screened thermometers fell to 49.2° ; on Friday they rose to 68.4° . Rain fell daily to the total amount of 1.247 inches, $\cdot 480$ inch being measured on Wednesday, when thunder and lightning occurred. Westerly winds (between S.S.W. and N.W.) prevailed.

During the week ended Saturday, the 28th, the weather remained changeable as in past weeks, squally and showery with a preponderance of south-westerly winds. In a word, it was of a cyclonic type. The scene of the heaviest rainfall was, however, shifted from Ireland and Scotland to England, and after Tuesday to the S. and S.E. of the last-named country. During Sunday a fresh breeze blew from W.N.W., and the weather, although cloudy, was chiefly fine and dry. On Monday a new depression advanced over Ireland from the westward, throwing the weather again into an unsettled, showery condition. By Tuesday morning the centre of this disturbance had reached St. George's Channel. It subsequently passed across England in an east-north-easterly direction, causing thunderstorms and heavy rains in that country. In Ireland, after a dull, rainy morning, the weather became bright, with a light breeze from N.E. and later from N. Wednesday was cloudy to fair in Dublin, but the weather remained thundery and showery in the S. and S.E. of England. At night a brisk fall of the barometer heralded the approach of a new depression to the Irish coasts. This system caused a short summer-gale and driving rain on Thursday morning, but the afternoon was fair and sunny. A subsidiary depression formed at this time over England and spread eastwards, so that heavy rains accompanied by thunder were again experienced very generally in Great Britain. Breezy, showery

weather lasted to the close of the week. In Dublin the mean atmospheric pressure was 29·624 inches, the barometer falling to 29·414 inches at 1 p.m. of Thursday (wind, S.E. to S.), and rising to 29·788 inches at 9 p.m. of Saturday (wind, S.W.). The corrected mean temperature was 58·9°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 57·2°. On Sunday the minimum was 50·9°, on Thursday the maximum was 68·7° in the shade. Rain fell on six days to the amount of ·301 inch, ·141 inch being measured on Monday. At Greystones 1·125 inches of rain fell during this week. Southerly and south-westerly winds prevailed.

The last three days were changeable like the greater part of the month. On Sunday, the 29th, a deep depression, in which the barometer fell almost to 29 inches, passed northwards across Ireland. It caused fresh southerly gales and heavy rains, and was followed by showers and squalls alternating with fine, bright intervals to the close of the month.

The rainfall in Dublin during the eight months ending August 31st amounted to 19·388 inches on 149 days, compared with 14·464 inches on 120 days in 1896, 9·455 inches on 96 days during the same period in 1887, and a twenty-five years' average of 17·558 inches on 128·1 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in August was 6·195 inches on 27 days, compared with 1·245 inches on 14 days in 1896, and 4·735 inches distributed over 24 days in 1895. Of this quantity ·850 inch fell on the 7th. The total fall since January 1 amounts to 25·945 inches on 143 days, compared with 14·327 inches on 91 days in 1896, 22·685 inches on 107 days in 1895, 25·206 inches on 131 days in 1894, 16·341 inches on 106 days in 1893, and 21·296 inches on 108 days in 1892.

At the National Hospital, Newcastle, Co. Wicklow, the rainfall in August was 4·526 inches on 20 days, ·807 inch being measured on the 29th and ·728 inch on the 7th.

THE DANGERS FROM BLISTERS.

M. COMBY reports an instance which should be a warning against the use of cantharidal vesication in children. The symptoms suggested the existence of meningitis: stiffness of the neck, agitation, delirium, and anuria. Auscultation showed only a few insignificant râles. The temperature was 102·2° F., and the anuria was almost total. These symptoms disappeared after the use of prolonged warm baths and diuretic drinks. After some days of fever convalescence was established.—*Journal des Praticiens*, 1896, No. 46, p. 732.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XIV.—*Influenzal Pseudo-Angina treated with very large Doses of Trinitrin.* By EDMUND HOBHOUSE, M.D. Oxon.; M.R.C.P. Lond.; Assistant Physician to the Sussex County Hospital, Brighton.

THE following case is, I think, interesting on account of the severity of the attacks, and as showing the enormous doses of trinitrin which can be used without producing any unpleasant effects:—

CASE.—A. B., aged thirty-two, a highly neurotic woman, without any organic disease, but a great sufferer from neuralgia, had influenza in February, 1894. About a week afterwards she began to have short, sharp attacks of pain in the cardiac region, about 1 inch internal to the apex and 1 inch below. At first they seemed to be brought on only by some exertion or sudden excitement, a quick movement, climbing a hill, a fright, &c., and lasted a few minutes only, but soon took to coming every few nights, about ten or eleven, and lasting some time, leaving the patient exhausted, breathless, and faint for an hour or two. She described the pain as being like a screw driven into her side, and found no relief except in pressing the side against some hard substance. Her favourite attitude during an attack was to sit bent over the back of a low chair, with a book pressed into the side.

The attacks increased greatly in severity in April, and began to come almost regularly every two or three nights, and I began to be anxious, as the state of the patient after them was serious—cold, clammy, almost pulseless, or with feeble irregular pulse, and terrible

dyspnœa, a veritable air hunger which nothing could appease; she would sit at the open window gasping for breath for an hour or two after the pain had gone entirely. She was, in May, much upset by a very sad family loss during her absence, and her condition got seriously worse; during May, June, and part of July she had attacks on an average every two or three days, perhaps oftener; they had all the character of so-called nerve storms, beginning, as a rule, about 7 or 8 in the evening, with short intermittent stabs of pain, which increased in severity and duration for two or three hours, until it became intense and continuous, and the patient could do nothing but call out "press! press!" This acute phase lasted two to three hours, and then the pain died away fitfully, intervals of comparative freedom alternating with sharp bursts; and the patient passed into the last stage, faintness and great dyspnœa lasting two or three hours more, during which her condition was sometimes most alarming—as she was quite exhausted and very cold, sometimes almost pulseless, yet could not lie down on account of the dyspnœa. With few exceptions, due to definite causes generally, the worst attacks were mostly nocturnal, and lasted occasionally from 6 or 8 p.m. to 4 or 6 a.m.

About the end of July they began to intermit, and appeared somewhat more hysterical in character; during the autumn they got gradually less frequent, and practically disappeared before the end of the year.

Amongst other symptoms, which were frequently present at one time or another, were severe pain in the back of the head, just below the occipital protuberance, pain, numbness and rigidity of the left arm and hand, with fixation of the fingers in an extended position; at times the right arm and the legs were affected in the same way.

The pulse was generally about 88 during the attacks—thin, wiry, and regular whilst the pain was severe—but intermittent and irregular during the last stage.

The only drugs that were of any service during the attacks were—nitroglycerine, morphia, and hyoscine. I soon found that ordinary doses of the first produced no effect whatever, and increased them gradually until 5, 8, and even 10 m of the B. P. solution were given at a dose, and fully 3j. during an attack. The ordinary physiological effect was extraordinarily small; on the pulse it was noticeable after a minute or two, and remained for about half-an-hour, but the face scarcely flushed, and there was never any noticeable headache. Once or twice, when given at the onset, it seemed to abort an attack, and generally relieved the pain, except during the severest paroxysms, while the patient believed that the subse-

quent dyspnœa was lessened by it. There was no evidence that it produced the smallest ill effect, even in these enormous doses. Morphia had, when tried hypodermically for neuralgia, produced only vomiting, and given no relief, so I did not try it at first, but eventually gave it by the mouth. At first it relieved the pain greatly, but, at the end of three or four days, caused such severe vomiting after about half-an-hour as to bring all the pain back, so that its use was greatly restricted. Gr. $\frac{2}{3}$ was the smallest effective dose. Hyoscine, gr. $\frac{1}{100}$, or $\frac{1}{50}$, had considerable effect, though much less than morphia, but it caused no bad symptoms. I did not like to press this somewhat uncertain and dangerous depressant in such a condition (nor, for the same reason, the coal-tar compounds), but I think it possible larger doses might have had an even greater effect. I tried oxygen inhalations, without any effect, during the stage of dyspnœa.

The amount of pressure which the patient craved for, and found relieved her, was really almost incredible—to be effective it had to impinge on an area about 2 inches in diameter, just below and internal to the nipple. It was generally applied by the hands of two powerful relatives, and was so great that the hand placed next the patient's dress was completely paralysed and numbed in a few minutes—it seemed almost impossible that the human thorax could stand it. It might be thought, perhaps, that some of the after symptoms were due to this or the other treatment employed, and it should be said, therefore, that all the symptoms were present, varying only in degree, in the earliest attacks, when the patient had no medical treatment, but instinctively applied pressure herself. It is interesting to note that, whilst the attacks lasted, trigeminal neuralgia, to which the patient had been subject constantly for years, was entirely absent, but returned as she got better.

The drugs were all relinquished without an effort, and within a year the patient was in better health than for years, and remains so.

I owed the suggestion of hyoscine to Dr. Sturge of Nice, who had a case strongly resembling this in many points—the attacks appeared after influenza, they were characterised by nocturnal periodicity, by being relieved by pressure, which the patient craved for, and by very large doses of amyl-nitrite and hyoscine. He holds that the patient is in grave danger during such attacks, and I am entirely in accord with him on this point in as far as a limited experience goes. In another case which commenced with absolute suddenness a week after

mild influenza, the first attack, which seemed due to the failure of the respiratory centre (using the term centre for convenience sake), nearly proved fatal, and the patient, who passed through a long and critical illness, seemed to be several times at death's door; the critical attacks coming on quite suddenly and unexpectedly—sometimes the cardiac, sometimes the respiratory, functions failing quite suddenly. In this case there was very severe pain in the back of the neck, with high fever at times, and much mental disturbance, delirium, delusions, and hallucinations running on intermittently for days together.

Because many of these attacks occurred in neurotic individuals, some have been inclined to regard them as hysterical in character. I believe this to be a grave and dangerous fallacy. It is impossible, of course, to say what the pathology of the condition is, but the most probable hypothesis is that which was accepted by many—viz., that the influenza poison attacks the nerve centres in the bulb and upper cervical regions, and, acting paroxysmally, produces these various symptoms. This theory derives some support from the analogy of tetanus and hydrophobia, in which the poison undoubtedly invades the medulla and causes paroxysms of spasm, in one of which the patient usually dies.

ART. XV.—*Infantile Mortality in Ireland.* By PATRICK LETTERS, M.D.; Diplomat in State Medicine; Fellow of the Royal Academy of Medicine in Ireland; Fellow of the Royal Institute of Public Health.

(Continued from page 296.)

TURNING now to the column giving purely rural county rates, these have been calculated by eliminating from each county all the urban districts with their births and infantile deaths. These have been subtracted from the whole-county births and deaths, the remainder being, of course, those which took place in the rural districts alone. From these remaining births and deaths, the rural county rate has been calculated in the ordinary way. It will be seen, on looking over this column, that Dublin again heads the list with a rural infantile death-rate of 108. The peculiarity now is, however,

that we miss Antrim from its accustomed place at the top of the list, and find, including Dublin, ten counties before it—namely, Kilkenny, Waterford, Kildare, Westmeath, Londonderry, Limerick, Down, Wicklow, and Cork. Rural Antrim, be it observed, still stands somewhat high (eleventh) amongst the Irish counties in the matter of infantile mortality. Its yet higher position (second), as a whole county, is therefore due to its large urban population. The infantile mortality in the rural parts of county Dublin, although 40 below that of the entire county, is still the highest rural rate in Ireland. The position of rural Kilkenny is explained by the fact that the whole-county and city rates do not materially differ from each other. It brings out the fact, however, that rural Kilkenny is, in the matter of infantile mortality, even worse than rural Waterford. The position of rural Waterford (third) discloses this—that the rural parts of county Waterford are, unlike those of Antrim, relatively as dangerous to child life as are the urban parts. Rural Cork takes rather a high position (fourth). This may possibly be explained by the large number of small towns with populations of 500 and upwards, which are not urban sanitary districts, for there are some forty of these in Cork county, and we have seen that small towns give a higher collective infantile death-rate than purely rural districts. In determining the rural rates for Antrim and Down, a little difficulty arose how to deal with Belfast, which lies partly in both counties. If Belfast were apportioned wholly to Antrim, the rural rate in that county would work out to the absurd figure of 21, which would, if true, render the glens of Antrim somewhat of an El Dorado for the young. To arrive at accurate results for these two important counties, only that part of Belfast which is in Antrim was taken account of, when making the Antrim calculations. Similarly, no births or infantile deaths in Belfast were considered in connection with Down, unless such as had actually occurred in that part of the city included in this county. The rural infantile rates in both counties, although not the highest in Ireland, are still high, but Antrim shows to slightly better advantage than Down. Looking now to the other end of the scale, where infant life is well protected, we find the honour of lowest rates shared

equally by three counties—Louth, Clare, and Fermanagh, which all show 61. Roscommon follows close with 62, Galway with 63, Longford with 64, and Kerry with 65. Looking to the fact that Roscommon contains no urban districts, this county, all round, seems fairly entitled to rank as absolutely the safest in Ireland for child life. It may be added to the credit of Roscommon that its general death-rate in 1896 was only 12·5, the third lowest general county death-rate in Ireland. The lowest rate 11·6, was in Mayo, but Leitrim came a close second with 11·8. Perhaps the best way to grasp the profound influence which urbanisation, with its associated evils, exerts on Irish vital statistics, is to strike one big calculation embracing the infant deaths of the fifteen large urban districts on the one hand, and those which would occur in the whole country, if the remainder of Ireland were as destructive of infant life as the large towns are, on the other. It is found on summing up the populations of the fifteen large towns that their combined population is about 18·7 per cent. of the entire population of the country. Of the 10,195 infants who died in 1896 in Ireland, no fewer than 4,078 died in the fifteen large towns. Now, 40 per cent. of the total infantile mortality of Ireland is a somewhat serious rate for fifteen urban districts, whose united populations certainly fall below 19 per cent. of that of Ireland. Were infants to die all over the country at the same rate as they do in the fifteen large towns, there would be recorded 21,809 deaths instead of 10,195; and if the rest of the country equalled the combined rate of Dublin and Belfast, the figure for infantile deaths would be 24,683! or, supposing the general death-rate to be unchanged, every third death throughout Ireland would be that of a child under the age of one year! The subject does not require to be pursued further for proof of the insecurity of child life, wherever urban communities exist. Let us now investigate the causes which are commonly supposed to operate in the production of these infantile deaths, for urbanisation is no more than a concentration of causes, and includes far too much to be accepted as a specific cause of infantile death. It has been found out by statistical observations, recorded for lengthened periods, and for populations large enough to remove all doubt from the

conclusion, that season has a well-marked influence on the general death-rate. The first quarter of the year is always responsible for the greatest number of deaths. Death-rates fall off considerably during the second quarter, and this falling off is a general feature, for it prevails whether the whole country be considered, or whether large urban or large rural communities be inquired into. The third quarter, in rural districts, shows invariably a further well-marked fall on the rates which prevailed in the second quarter, and even in urban districts the same feature exists, though to a less marked degree. Occasionally, in urban districts, the third quarter shows an increase on the second, but this is the exception, not the rule. The fourth quarter shows a rise on the third. The point to remember is that general mortality is highest in the first quarter of the year and lowest in the third. Let us now see how far Irish infantile mortality corresponds with this general law. The following table has been prepared to show seasonal mortality amongst infants in all Ireland, the four provinces, the fifteen large towns collectively, and the six largest towns individually. A plus sign is prefixed to show maxima and a minus sign to show the minima rates.

Seasonal Distribution of Infantile Death-Rates in all Ireland, the Provinces, and Large Urban Districts.

—	Quarter ending March	Quarter ending June	Quarter ending Sept.	Quarter ending Dec.	—	Quarter ending March	Quarter ending June	Quarter ending Sept.	Quarter ending Dec.
All Ireland	+102	— 85	95	96	Dublin	122	—120	+200	176
Leinster	105	— 99	+123	111	Belfast	148	—125	154	+163
Munster	+101	— 72	93	81	Cork	117	— 86	+130	95
Ulster	+111	— 89	90	99	Limerick	101	99	+119	— 89
Connaught	+ 81	— 61	— 61	72	L'derry	+154	132	119	— 90
15 Large Towns	131	—118	+163	150	Waterford	147	171	+195	—133

This table shows, if we disregard the comparatively small cities of Limerick, Londonderry, and Waterford, that the period of the year which is safest for the general population

is not the safest for infants. We find the minimal mortality quarter not the third, but the second; and, as this feature is common to all Ireland, all the provinces, the fifteen large towns collectively, and Dublin, Belfast, and Cork individually, it must be accepted as conclusive. The period of maximal infantile mortality in all Ireland, in three of the provinces, and in Londonderry, corresponds with the period of the year which also gives the highest general death-rate; but in Leinster, the fifteen large towns, Dublin, Cork, Limerick, and Waterford, we find the children to die fastest at a season of the year when the general population is safest. If we scrutinise the figures more closely, we can see that Leinster would conform to the general rule of the other provinces if there were no Dublin in it. Belfast is exceptional in so far as having its period of maximal mortality in the fourth quarter. Its large mortality, however, in the third quarter is also seen, and, looking to the entire table, it may be safely laid down as a law, that large urban districts show the heaviest infantile mortality in the third quarter of the year. This means that summer diarrhœa, which attains its maximal incidence in the end of July and beginning of August, influences the infantile death-rate in large urban districts only—not in rural localities.

The extraordinary rate of 200 in Dublin during the third quarter of the year points to the conclusion that the conditions which favour summer diarrhœa attain their maximal intensity in the metropolis, or in particular spots within the metropolitan area. The seasonal figures for Waterford city are somewhat perplexing. It will be seen that it is the only district in the table where the rate for the second quarter of the year exceeds that of the first. The separate incidence of summer diarrhœa is not so markedly seen as in Dublin or Cork, but its lowest quarterly rate would be a high rate for any other city three times its size, thus showing the operation in Waterford of destructive agencies all the year round. In contradistinction to this urban feature of high autumnal mortality, I shall now introduce a small table to show the absence of this character, when rural localities are considered with reference to their seasonal mortality rates.

*Seasonal Distribution of Infantile Death-Rates in the Rural Parts only
of the Provinces.*

—	Quarter ending March	Quarter ending June	Quarter ending Sept.	Quarter ending Dec.	—	Quarter ending March	Quarter ending June	Quarter ending Sept.	Quarter ending Dec.
Leinster	+91	83	—70	74	Ulster	+94	72	—64	72
Munster	+94	—63	76	77	Connaught	+79	67	—60	69

It is here seen that the season of maximal mortality in all the provinces is the first quarter of the year, and in three of them the period of minimal mortality is the third quarter. In rural Munster the fewest infantile deaths occur in the second quarter of the year. Without venturing upon any explanation of this peculiarity, I beg to direct attention to the entire absence of that form of zymotic diarrhœal influence which is so marked a feature in the infantile death-rates of all large urban districts during the third quarter of the year. I use the term zymotic diarrhœa here, because in the production of infantile deaths everywhere and at all seasons I recognise diarrhœa as a widespread agency which is not always identical with these zymotic cases, which occur only when a critical earth temperature of 56° F. becomes permanent at four feet beneath the surface of the ground. This brings me back to the general statement made that zymotic diseases had next to no share as causative agents in the production of infantile deaths. In its intensive form as a true zymotic, diarrhœa operates only during a small part of the year, and is practically confined to urban districts. Any diarrhœa mortality chart will show this. If we examine Buchan and Mitchell's curve, we find that diarrhœa does not rise above the mean line until the last week in June; it ascends rapidly through July, attaining its maximal intensity of over 300 per cent. above the mean in the last week of July and first week of August; it then declines, not quite so abruptly as it ascended, through August and September, reaching the mean line again in the first week of October. For eight and a half months of the year diarrhœa is under the mean, and for seven months it is from 75 to 85 per cent.

below the mean. Let me now offer some proof of the broad statement that zymotic diseases do not cause infantile deaths. Amongst the valuable information conveyed by the figures of the English Registrar-General in his 1895 report, it is found that 148,093 children died under the age of one year, and that 69,986 of these deaths were infants under the age of three months. Figures on this scale guide us unerringly in our calculations, and it will now be seen that the statement already made, that nearly one-half of all infantile deaths occur within the first three months of life, is substantially accurate.

Running down the list of causes of death under one year of age, and confining attention to zymotic diseases, neglecting diarrhoea, we find that 34 deaths were caused by small-pox, 2,568 by measles, 313 by scarlet fever, 1 by typhus, 774 by influenza, 4,416 by whooping-cough, 452 by diphtheria, and 30 by enteric fever, or, in all, these zymotic diseases caused 8,588 only of the deaths. Under the age of three months, 10 deaths resulted from small-pox, 68 from measles, 23 from scarlet fever, none from typhus, 204 from influenza, 740 from whooping-cough, 39 from diphtheria, and 2 from enteric fever, or, in all, these zymotic diseases caused no more than 1,086 deaths. Now, 8,588 deaths out of 148,093 is a very small proportion to be caused by zymotic diseases, and 1,086 out of 69,986 is a still smaller proportion, therefore my contention is fully established by the hardest of all arguments that zymotic diseases have next to nothing to do in the destruction of infant life.

What then causes these deaths? Let us again turn to the Registrar-General's report to see if he can enlighten us. Time will not permit me to take every tabulated cause of death, nor is there any necessity for this. I shall take up such registered causes only as are responsible for infantile deaths on a large scale. A long array of big figures, it has seemed to me, might be rather confusing, and to make my points clearer I shall substitute percentages to total deaths for the actual number of deaths. These percentages are not stated in the report, but I hold myself responsible for their accuracy. Confining attention, in the first instance, to deaths under 3 months, it is found that 21 per cent. are ascribed to debility, atrophy, and inanition. These

terms, objectionable though they be as causes of death, can hardly be dispensed with at this early age. It is often impossible to determine the precise causes of death in the very young, and these unsatisfactory and indefinite expressions are had recourse to, to satisfy registration requirements. Twenty-five per cent. of these very early deaths are put down to premature birth, 15 per cent. to convulsions, 9 per cent. to respiratory diseases, 7·3 per cent. to diarrhœa, 2·8 per cent. to enteritis, nearly 2 per cent. to suffocation, 1·9 per cent. to tubercular diseases, 1·2 per cent. to syphilis, under 1·1 per cent. to whooping-cough. Measles and all other miasmatic diseases combined give only a small decimal percentage. Turning to all infantile deaths under one year of age, we find the percentage from debility, atrophy, and inanition reduced to 14 per cent., respiratory diseases increased to 18 per cent., enteritis increased to 4·5 per cent., convulsions reduced to under 12 per cent., tubercular diseases increased to 5·4 per cent., syphilis reduced to 1 per cent., diarrhœa increased to 12·9 per cent., measles now measurable at 1·7 per cent., and whooping-cough increased to 2·9 per cent. Now, this information is very interesting, but it is not satisfying—it tells us extremely little about the causation of infantile mortality. We have no means of knowing what causes these fatal atrophies, debilities, inanitions, convulsions, premature births, and diarrhœas, and if we are to get at the root of infantile mortality we must search elsewhere than in these registration returns. *Poverty* is very commonly accused as one of the chief causes of infant mortality, but I am not aware that this rests on any sound statistical basis. It is, I think, open to question whether poverty, *per se*, can be justly regarded in this light in Ireland, and for this opinion I shall presently supply a reason. It is not questioned that the general death-rate is seriously affected by poverty, nor is Ireland exceptional in this respect. It has been demonstrated that the death-rate among the “service classes” in Dublin is fully double that in the independent and professional classes. It does not necessarily follow, however, that poverty operates with equal force, or with any force at all, in the production of deaths under the age of one year, and a little reflection on the point will make this clear. Poverty operates on the general

death-rate by the insufficiency and injurious quality of food, by the deficiency of clothing, the absence of shelter, by laborious, unhealthy, and dangerous occupations, by inability to secure prompt relief from disease, &c. Now, all these factors necessarily tell more heavily at all other periods of life than during early infancy. In so poor a country as Ireland it may seem no easy matter to arrange the counties in the precise order of their poverty, but we can group them in lots, so that no doubt can exist that this lot of counties is an absolutely poor combination, and that that other lot is, relatively speaking, not nearly so poor. Amongst the statistics of Ireland in Thom's Official Directory, a tabular statement is given of the number of agricultural holdings in each county, arranged according to rateable valuation. The number of holdings at £4 and under is given, and at several higher valuations also, the last column giving the total holdings in each county. The percentage proportion of holdings of £4 and under to total holdings should give a fairly approximate idea of the degrees of poverty prevailing. To avoid any fallacy which might possibly arise by comparing individual counties, and to do away with the objection that particular counties had been selected to sustain a predetermined conclusion, I have analysed the whole thirty-two. The standard of measurement, be it noted, is purely an agricultural one. Urban considerations are excluded from the estimation, and, in order to compare like things only with like things, urban considerations shall also be excluded when I come to draw conclusions. The six poorest counties thus found are, in the order of their poverty, Donegal, Mayo, Galway, Kildare, Kerry, and Roscommon, and the six least poor counties, in the order of their freedom from poverty, are Antrim, Monaghan, Fermanagh, Down, Cavan, and Cork. Doubtless these are not the poorest and richest of the Irish counties, if urban considerations enter into the calculation, but they come out so by the purely agricultural standard of measurement adopted. Let reference now be made to the table containing infantile death-rates in the counties, and let attention be fixed upon the *rural* county rate only in the third column of figures. It requires no calculation to see that the six poorest counties stand better than the others in the matter of infantile mortality.

To get at the exact difference, I have worked out the collective death-rates of both lots. I find the figure for the poor counties to be 69, and that for the prosperous ones to be 80. This, I think, warrants the conclusion that poverty in rural Ireland is not only *protective* of infant life, but is so to a very appreciable degree. Poverty in urban districts may have an opposite influence, but then this is not poverty alone, but poverty plus vice, drunkenness, crime, and other social evils, not associated with rural poverty.

Improper feeding is responsible for more infantile deaths than any other single agency. This evil arises from ignorance of the fact that the digestive organs, in early infancy, are unable to assimilate farinaceous food, and that human milk cannot be replaced by other milks without serious risk. The evils of bottle-feeding have reached a stage when legislative restrictions should be imposed in the interests of the public welfare. Careful preparation of artificial substitutes for human milk does not meet the case, for microbial life can only be excluded by sterilisation, which itself is largely destructive of the nutritive qualities of the substituted milk. Were infants fed universally in the natural way by mother's milk, even for a few months, the lives saved would run to large figures. If registrars were required, when recording births, to issue printed directions, pointing specifically to the dangers of artificial feeding, much of our infantile mortality might soon disappear. Only the other day it was recorded in a medical journal that an infant of five months died under the charge of a pauper nurse in a workhouse from starvation. The regulation diet for this infant consisted of two pints of milk, a quarter pint of beef-tea, one ounce of sugar, six ounces of bread, and two ounces of rice *per diem* ! ! ! An Act for the Better Protection of Infant Life has been in force since 1872, and an amended Bill for the same purpose has just passed through Parliament; but neither the Act of 1872 nor that of 1897 is directed to meet any of the ordinary well-understood causes of infant destruction. These measures are simply statutory enactments regulating the registration of nursing homes for infants, necessary and useful no doubt, but not dealing with infant life protection in any comprehensive sense, and not likely to have any measurable effect upon the ordinary infantile death-rate of the country. If it were

enacted that no woman during the latter months of pregnancy—say after the sixth—nor within six months after delivery, could be employed as a factory operative, or otherwise, where it became necessary to separate herself from her infant for considerable portions of the day, a vast saving of human life would most certainly result. In the event of the death of her own child, a nursing mother of this class might, in numerous instances, find remunerative employment as a wet nurse, with the probable result of saving her employer's child, who might otherwise perish from artificial feeding. Legislative interference in the protection of infant life is a subject brimful of interest, wherever women are employed in large industrial centres, and it is the absence of these huge industrial hives that gives Ireland, as a whole, the marked advantage it has over England, as a nursing home for infancy. See what the Legislature could do for Lancashire, where one out of every five children born perishes before the completion of its first year of life. This, mark, is a whole-county rate, but what rate may be possible in the hearts of its urban districts? Throughout these populous areas of England we can understand what the Registrar-General means when he tells us of the enormous numbers of infants constantly dying from marasmus, debility, atrophy, convulsions, and diarrhœa. We interpret this to mean that a considerable percentage of these deaths results directly from improper feeding; that two prime causes are starch, which no infantile stomach can digest, and microbe-tainted cows' milk, which induces fatal irritative diarrhœa.

Insanitary surroundings are frequently charged with a large share of infantile mortality, but close investigation will not, I think, bear this out. We have seen in the English Registrar-General's report that children under one year of age do not die from zymotic diseases as older children do—in particular we have seen that, under the age of three months, they are practically exempt from measles and all other miasmatic diseases. We have further seen, up to the age of one year, neglecting diarrhœa, that whooping-cough, the most fatal of infantile zymotics, accounts for only 2·8 per cent. of these deaths, and that measles, the next zymotic in the order of fatality, is responsible for no more than 1·7 per cent. We know, moreover, that early infancy is, in

itself, a barrier to the invasion of almost the whole order of zymotic diseases, and that purely filth diseases do not operate at the earliest period of life. Insanitary surroundings, destructive of life though they be when the first year of life is passed, and onwards through childhood and adolescence to mature age, exert a deleterious influence in early infancy only through one channel—namely, that of artificial feeding. Unquestionably, numberless cases of fatal diarrhœas, occurring at all seasons of the year, amongst the very young, are due to filth pollution of the various substituted foods, which filth pollution is the direct result of insanitary surroundings. My argument, however, is that the breast-fed infant imbibes no microbes to set up fatal diarrhœa; and, let its surroundings be ever so insanitary, it lives on, in perfect security, until a period of life when it is better able to resist those filth diseases which spring from such surroundings. In the season distribution tables given it will be remembered that infantile mortality is greatest all over Ireland (rural parts) in the first quarter of the year—*i.e.*, when the lowest temperature prevails—and that a considerable fall takes place during April, May, and June. This is likewise a feature of the general death-rate. In 1896 three counties only out of the thirty-two gave a higher general rate in the second quarter than in the first. These were Kilkenny, which was 0·8 higher in the spring than in the winter quarter, Westmeath and Roscommon, which were each 0·1 higher. These exceptions, however, only emphasise the operation of a general law, for in the remaining twenty-nine counties the spring death-rate was below that of winter, Longford showing a fall of 5 per 1,000 of its population. The point, however, which I wish to impress, is that the advent of milder weather in spring brings a still greater lowering in the infantile death-rate; or, to put it otherwise, the winter season tells more heavily on the infantile than on the general population. Respiratory diseases always stand high when temperature is low with old and young, and are predisposed to by insufficient clothing and exposure. We have seen that respiratory diseases kill infants under three months at the rate of about 9 per cent. of their total deaths, but we have also seen that the same diseases kill under one year of age at the rate of 18 per cent. This means that

children between the ages of three and twelve months die from respiratory diseases at a rate remarkably in excess of children under three months of age. Now, what is the explanation of this hard statistical fact? According to all our usually accepted views, children between three and twelve months of age should be better able to resist the depressing effects of low temperature and the diseases resulting therefrom than infants under three months of age, and, conditions of protection being equal, should show a lowered, not an increased, mortality from respiratory diseases. Unless, therefore, some other solid reason can be advanced to explain the greater freedom from respiratory diseases during the earliest period of infancy, we are driven to the conclusion that the immunity results from the more perfect protection afforded. If this be true, it follows that deaths from respiratory diseases between three and twelve months could be reduced by greater attention being paid to the warmth of clothing for children of these ages during the colder months of the year.

If we now take a retrospective view of the percentage differences already pointed out between the registered causes of death under three months and under one year, we can account for everything satisfactorily except the diminished incidence of respiratory diseases at the earliest period. The diminution of deaths from debility, atrophy, and inanition after the first three months is due to the greater precision with which specific causes of death can be determined as the months of childhood advance. Premature births are lessened, because deaths attributable to this are exhausted almost before the close of the third month of life. Tubercular diseases are increased, because we now know, what we did not know a few years ago, that children are not born tuberculous, but contract the disease by invasion of the bacillus. Although conclusive proof is not yet established, there is a well-grounded belief that cows' milk is a fruitful source of tubercular disease, owing to the great prevalence of bovine tuberculosis. More cows' milk is consumed after three months than before that age, and hence the liability to the disease is correspondingly increased. This subject is one of surpassing interest, and, in the present state of our

knowledge, a more universal return to human milk is most desirable.

Syphilitic deaths are reduced, because this agency operates most powerfully at the very earliest period of life, and largely in the intra-uterine period. Diarrhœa is increased, because those pollutions of milk and other foods which cause it come more into play after than before three months. In deaths from this disease, the saving effects of breast-feeding are clearly shown. Measles and whooping-cough begin to be measurable only after three months, in accordance with the law of zymotic immunity at the earliest period of life.

Infant Life Insurance in the large industrial centres of England is known to have a serious effect on the mortality of the young. The insured child has a decidedly less chance of surviving than the uninsured. Any comprehensive Infant Life Protection Bill could remove this danger by rendering it penal to insure the life of a child under the age of one year.

Drunkenness, with its multifarious catalogue of concomitant miseries, must ever stand charged, in large urban districts, with a big share of the infantile as well as of the general mortality. To cope with this evil is the province of the social reformer, but the medical profession should assist in the work to a greater extent than it does. We can give the why and the wherefore of this great State question in the name of science, and we should co-operate.

Prematurity of birth, as a cause of infantile deaths, is accountable for one-fourth of all deaths in England under the age of three months. The rate is a somewhat startling one. The Irish returns give no information on this subject, but were Irish figures available, they would not approach this proportion. In England, however, the ratio of deaths from premature birth to total births is rapidly on the increase, and of recent years, I should say, alarmingly so. Between 1861 and 1865 the rate was 11·19 per thousand births. In 1895 it was 18·98, and almost every year of the fifteen preceding 1895 shows a distinct rise on the rate of the preceding year. Urbanisation has something to do with the increase, but the effect of an efficient Infant Life Protection Act, by the indirect protection it would afford to

pregnant women, would be to lessen the evil of deaths from premature birth immediately and substantially.

Illegitimacy is a recognised cause of infant mortality wherever it prevails, although somewhat difficult of precise estimation. Even in countries where illegitimacy is far more serious than it is in Ireland, its rate does not show a constant relation to the infantile mortality. It can only be got at by separating all births into two classes, the legitimate and illegitimate, and by dealing similarly with the infantile deaths. It then appears that illegitimate children die at about double the rate of the legitimate. Although, in the aggregate, illegitimacy is a State question of high importance, it may be safely said that this evil exists to a markedly less extent in Ireland, as a whole, than in the other divisions of the kingdom. The returns of the Irish Registrar-General make no reference either to the rate or distribution of illegitimacy in the country, and hence I am unable to make any attempt at estimating its effect on the infantile mortality rate. In Ireland, as elsewhere, however, illegitimacy must have a certain effect, and, in different counties, will vary according to the extent of its prevalence. Even with abundant material it would be a troublesome estimation to get at, and I shall leave this part of my subject for exploration by those whose particular tastes lead them in this direction, and who are, perhaps, better qualified for the task. My own view is, however, if we leave the larger urban districts out of count, and perhaps three or four counties, that illegitimacy in Ireland has practically no measurable effect on the infantile death-rate.

At the outset I made the admission that we do not hope to reduce the infantile death-rate below a figure that will always be high relatively to death-rates at most other ages. To upset a universal law is beyond our powers. With regard to death during infancy, it is a universal law that the liability to death is greatest in the earliest weeks of life, and with each succeeding week from birth there is an increasing security, which we have seen to be distinctly marked and easily measured after the completion of the third month. This security increases until the period of infancy expires. If we seek to reduce infantile deaths, it is not by overturning nature's law that we should work,

but by doing our utmost within that law. The infantile death-rate may be measurably reduced at all periods between birth and the expiry of infancy, at one year of age, without any subversion of this natural law, and I fail to see why we should stand idly by, practically confessing our inability to save life at its earliest stage, when we put forward our best efforts, at all other periods of life, with proved success. To attain the maximal success possible in the reduction of the infantile death-rate, we require the active co-operation of the Legislature—not its nominal help merely. The Infant Life Protection Act gives some assistance, it is true, but not of a kind, nor in a way, to meet our practical everyday wants. It meets a danger to infant life which is exceptional and extraordinary, but it does not touch the grand agencies of destruction which constantly and ordinarily sweep young lives away. Adolescent and adult life is protected by the Public Health Acts, by the Food and Drugs Act, by the Factory and Workshop Act, by the Housing of the Working Classes Act, by the Infectious Disease (Notification and Prevention) Acts, &c., but the infants are allowed to perish in myriads by feeding bottles with foul rubber tube-fittings, by farinaceous substances which ferment and decompose as soon as ingested, by neglect, by exposure, by deprivation of the natural nutriment, by preventable causes like premature birth, by preventable diseases like diarrhœas and diseases of the respiratory organs, and the law raises not its strong arm to save them. Infants do not want legislative protection against infectious diseases—nature's law does that for them—but they do require protection from that killing ignorance which does them to death by artificially-induced diarrhœas, by convulsions from improper feeding, by marasmus from starvation. Let this question of the saving of infant life receive from the profession that measure of study to which it is justly entitled, let the best means be formulated to stem the infantile death current in our populous urban centres, and let the Legislature be urged to deal with the subject in a spirit of humane comprehensiveness.

I am informed by Dr. George I. Mackesy, of Waterford, that many cases of infantile deaths in that city are not medically certified, that over-crowded tenement houses are

still largely occupied by the poor, that the city drainage admits of much improvement, that the water supply is excellent and abundant, and that there is much drunkenness among women, with consequent neglect of young children.

The last mentioned feature is bound to influence the infantile death-rate, while over-crowding and defective drainage tell more on the general death-rate. Both rates being excessive in Waterford, the city should be a good field for both social reformer and sanitarian. The Corporation, now that their water supply is right, should not hesitate to expend what may be necessary to put the drainage of the city in order, and more suitable houses should be constructed for the poorer classes. Any expenditure in this direction would be a sound financial investment, if human life has value in a monetary sense.

ART. XVI.—*A Case of Ununited Fracture of the Head and Neck of Radius treated by Excision.* By T. E. GORDON, M.B., F.R.C.S.I.; Surgeon to the Adelaide Hospital.

A PATIENT presented himself for treatment at the Adelaide Hospital in March last suffering from the crippling effects of ununited fracture of the upper end of the radius.

CASE.—He is a coachman, aged forty-five years. He gave me the following history of his injury:—

On November 26th, 1896, he fell from a high-wheeled dog-cart and struck the ground first with his outstretched right hand. Before he could get clear the horse, which had fallen, struck him on the shoulder, throwing him violently on to the right elbow. He was first seen by Dr. Woodroffe, of Fermoy, who reduced a dislocation of the forearm backwards. He found that the man had also sustained a Colles' fracture. Dr. Woodroffe informs me that he detected much crepitus about the elbow-joint, but, owing to the excessive swelling, he was unable to make a complete diagnosis.

The patient came to Dublin in December, and consulted me at the hospital in March. The arm was at this time quite useless to him. He was unable even to carry a spoon to his mouth or button his clothes. He had considerable pain about the elbow when he attempted to bend or straighten the arm.

With the exception of crepitus over the position of the upper end of the radius there were no distinctive signs of the fracture—

no tumour, for instance, to be felt about the front of the joint. Evidence of the Colles' fracture was sufficiently clear.

Movement was very limited, both as regards flexion and extension, pronation and supination. Indeed, the latter movements were, I think I may say, quite impossible.

A skiagram was taken by Dr. Haughton, which demonstrated a fracture of the neck of the radius.

At the man's urgent request I decided to operate. First I put him under an anæsthetic, and broke down some adhesions at the inferior radio-ulnar joint, which allowed of some rotation of the forearm. I was also able to increase the range of flexion and extension. A considerable degree of inflammation followed upon this treatment, but soon subsided. The disappearance of the swelling was hastened by massage.

On April 17th I operated. Having exposed the injured bone by a posterior incision about three inches long, I found the head split vertically into two nearly equal parts, both of which were separated from the shaft. There was some difficulty in removing the fragments, particularly the more posterior, owing to adhesions into the lesser sigmoid cavity. I was surprised to find a mass of soft bone about the upper end of the shaft, evidently periosteal new bone. This I gouged away, but I did not succeed in removing as much of the shaft as I should have wished. I believe further removal would have given a greater degree of rotation for the forearm, but it would have required a considerably more extensive dissection to accomplish, and I was unwilling to disturb the parts further than I had already done. I closed the greater part of the incision, but left some iodoform gauze packing in the depth of the wound, on account of the persisting oozing. I removed this at the first dressing.

The wound remained aseptic, and was consequently so far healed as to allow of passive movements being commenced in about a week.

The result of this operation has been satisfactory. I examined the arm about the first week in July, and was pleased to find the man had then almost all the natural movements of the part. The power of supination remained, however, very limited—he could not carry the arm in the direction of supination beyond the mid position. There was evident a considerable bony enlargement of the upper end of the radial shaft, and I imagined this to be in part the cause of the limited range of rotatory movement. The patient has been able to resume his occupation, and is now driving a pair of horses.

Remarks.—I wish to emphasise the following points :—

1. The case is an example of a rare form of a rare fracture—*i.e.*, a vertical fracture of the head, with transverse fracture of neck of radius.

2. It was not accompanied by fracture of the coronoid. There was associated with it a dislocation of the forearm backwards, and, in addition to this, a Colles' fracture.

3. The fragments were quite ununited, and one was partially ankylosed into the lesser sigmoid cavity, the result being almost total annihilation of function at the elbow-joint.

4. Excision would appear to offer the best chances to the patient in such cases (and previously recorded instances, such as Mr. Jacobson's and Mr. Wainwright's, bear out this statement, as well as the result I now record). Ankylosis of the elbow-joint is, of course, a danger to be feared, but it is very unlikely to take place if one is careful to prevent the occurrence of sepsis.

ART. XVII.—*The Medicine and Surgery of the Homeric Poems.* By JOHN KNOTT, M.A., M.D., Ch.B., and Dip. Stat. Med. (Univ. Dubl.); M.R.C.P.I.; M.R.I.A.; Fellow of the Royal Academy of Medicine in Ireland; &c.

(Continued from Vol. CII., page 400.)

LONGEVITY—*continued.*

THE lines of Ausonius which give his rendering of Hesiod on the subject of animal longevity, have often been quoted and commented on by the older writers on Natural History :—

“Ter binos deciesque novem super exit in annos
Justa senes centum quos implet vita virorum,
Hos novies superat vivendo garrula cornix,
Et quater egreditur cornicis sæcula cervus,
Alipedem cervum ter vincit corvus.”

[“To ninety-six the life of Man ascendeth,
Nine times as long that of the Chough extendeth,
Four times beyond, the life of Deer doth go,
And thrice is that surpassed by the Crow.”]

This curious passage would give 96 years for the limit of the life of man; 864 for that of the Chough; 3,456 for that of the Deer; and 10,368 for that of the Crow! How such

a calculation of terms of life could ever have gained so wide-spread notoriety—not to say belief—is very hard indeed to guess: the opinion of even Methuselah himself on such a question could have very little value. But whatever the explanation, there is no doubt that the notion was deep-rooted in the classical minds of ancient Greece and Rome: it made Theophrastus expostulate with Nature on the subject of the long life of Crows; it originated the epithet of τετρακόρωνας which Oppianus applied to Deer; and suggested the proverbial phrase of Juvenal—"Longa et cervina senectus." The student of the history of popular opinion knows how little the value of evidence has to do with the persistence of belief. Pliny, indeed, tells us, with apparently authentic gravity, of a Deer which had been taken with a collar around its neck, an inscription on which proved—to the satisfaction of his captors—that it had been placed there by the hands of the great Alexander one hundred years before. A more recent story of animal longevity originated during that violent upheaval of Teutonic thought which occurred in the fifteenth century. "In the year 1497, in a fish-pond in *Suabia* near *Huilprin* in *Germany*, they took a carp of a prodigious size, which had in his ear a ring of copper with these words in *Latin*—'*I am the first fish that was put into this pond, by the hands of Frederick II., Governor of the world, the fifth of October, 1230.*' This carp appeared to have lived 259 years, and probably might have lived much longer had he not been thus taken out."

In his "*Survey of Cornwall*," Carew brings into special prominence the characteristic longevity of a large proportion of the inhabitants of that county. A kinsman of his own had lived to the age of 112 years. "One Beauchamp" of his acquaintance, to 106; and "one Polezew" had recently died at 130. "Four score and ten years of age" was "ordinary then in every place, and in most persons accompanied with an able use of the body and their senses." The special features of one case inspired this writer to the composition of a rhyming epitaph. The subject was an individual named *Brawne*—an Irishman by birth, and a Cornish tramp by adopted profession. It runs as follows:—

Here Brawne the *quondam* Beggar lies,
 Who counted by his tale
 Some six score winters and above,
 Such vertue is in Ale.
 Ale was his Meat, his Drink, his Cloth,
 Ale did his death deprive :
 And could he still have drunk his Ale,
 He had been still alive.

We possess the written testimony of Felix Platerus to the age of his own grandfather. This eminent medical writer tells us that the old gentleman, when in the hundredth year of his age, took unto himself a bride of thirty; that a son was born of this auspicious union, at whose marriage—twenty years later—the father was present, and still in the enjoyment of health and vigour; that he survived six more years, and so died at the age of 126.

In the “*Voyages de Tournefort*” is noted at some length the following remarkable case, which has received special attention from the author of “*Hermippus Redivivus*” and his English disciple and commentator, Dr. John Campbell, the friend of Samuel Johnson, who gives it in the following words:—“*Francis Secardi Hongo*, usually distinguished by the name of *Huppazoli*, was consul for the state of Venice, in the island of Scio, where he died, in the beginning of 1702, when he was very near 115. This man was a native of *Casal* in the *Montferrat*. He married in *Scio*, when he was young, and being much addicted to the fair sex, he had in all five wives, and fifteen or twenty concubines, all of them young, beautiful women, by whom he had forty-nine sons and daughters, whom he educated with the utmost tenderness, and was constantly with them, as much as his business would permit. He was never sick; his sight, hearing, memory, and activity were amazing; he walked every day about eight miles; his hair, which was long and graceful, became white by the time he was four-score, but turned black at one hundred, as did his eyebrows and beard at 112. At 110 he lost all his teeth, but the year before he died he cut two large ones with great pain. His food was generally a few spoonfuls of broth, after which he eat some little thing roasted; his breakfast and supper, bread and fruit; his constant drink, distilled water, without any addition of wine, or other strong liquor,

to the very last. He was a man of strict honour, of great abilities, of a free, pleasant, and sprightly temper, as we are told by many travellers, who were all struck with the good sense and good humour of this polite old man. The reader will easily discern that the point upon which I chiefly insist is his having continually young company about him, especially young women; for though neither himself, nor for aught I know anybody else, ever remarked that they might contribute to the lengthening his life, yet so the fact might be, though not observed." Readers of the medical "Curiosities of Literature" are aware that the elixir by which Dr. Cohansen and his English exponent, Dr. Campbell, felt confident that the life of man could be again prolonged to the possible antediluvian period of a thousand years was the inhalation (through lungs and skin) of the emanations from bright, healthy young persons, more especially young females, and most especially young virgins. Those learned gentlemen were strongly of the opinion that the only reason why the life of Solomon had not been so prolonged was his intemperate use of the opportunities which had been placed within his reach.

The same authority quotes at length the case of a Bengalese tercentenarian from the "History of the Indies" by Father Maffeus, "which has been always esteemed a perfect model—in point of veracity, as well as elegance of its composition. The far East was, of course, in those days of slow travel and little popular education, the land of miraculous wonders. The Sultan of Cambaya had died, and his kingdom had been conquered and seized by the adventurous Portuguese." The reverend historian proceeds to say—"They presented at this time to the general a man born amongst the ancient *Gangards*, who are now called *Bengalars*, who was 335 years of age. There are various circumstances which took from this account all suspicion of falsehood. In the first place, his age was confirmed by a kind of universal tradition, all the people averring that the oldest men in their infancy spoke of this man's age with astonishment; and this old man had then living in his own house a son of ninety years old. In the next place, his ignorance was so great, and he was so

absolutely void of learning, that this removed all ground of doubt, for by the strength of his memory he was a kind of living chronicle, relating distinctly, and exactly, whatever had happened within the compass of his life, together with all the circumstances relating to it. He had often lost and renewed his teeth; his hair, both on his head and beard, grew insensibly grey, and then as insensibly turned black again. The first age of his life he passed in idolatry; but for the two last centuries of his life he had been a *Mohammedan*." This story is further confirmed by the testimony of Ferdinand Lopez de Castegneda, who occupied the high position of historiographer royal to the Portuguese monarch. He informs us that, "in the year 1536, there was a man presented to the Vice-roy of the *Indies*, *Nunio de Cugna*, who was near 340 years old. He remembered that he had seen the city in which he dwelt, and which was then one of the most populous in the *Indies*, a very inconsiderable place. He had changed his hair, and recovered his teeth four times, and when the vice-roy saw him, his head and beard were black, but the hair weak and thin. He asserted that in the course of his life he had seven hundred wives, some of which died, and the rest he had put away. The King of *Portugal* caused a strict inquiry to be made into this matter, and an annual account of the state of the old man's health, to be brought him by the returns of the fleet from *India*. This long-lived person was a native of the Kingdom of *Bengala* and died at the age of 370." And Dr. Campbell dwells upon this case at length, as he considers it almost conclusive as an argument in favour of the efficacy of his favourite elixir:—"I therefore submit it to the reader's consideration, whether it be not a matter worthy of reflection; that there is a certain strength in the human body, which assisted by some lucky circumstances enables it to renovate itself sometimes once, as in the case mentioned by *Lotichius*, sometimes oftener; as in that of the Countess of *Desmond*, who had all her teeth thrice; and this native of *Bengala*, who changed his hair and teeth four times; and there is another circumstance of which I cannot but take notice, as it favours my doctrine very much; that this man who

lived to an age much greater than any, for which we have as good authority, had so many wives, to the efficacy of whose breaths, and the insensible effluvia of their wholesome bodies, I should not scruple to attribute in a great measure his extraordinary longevity."

The "Merry Monarch" of England, whose opinion of men and things was probably of much greater value than his apparently frivolous life after the Restoration would appear to have warranted, has expressed his views on this subject in a way which appears to me worthy of attention. The record is that of Sir William Temple:—"I remember King *Charles* the Second (a Prince of much and various knowledge) upon this Subject, falling in Discourse, asked me, what could be the Reason that in Mountainous Countries the men were commonly larger, and yet the Cattle of all sorts smaller than in others. I could think of none, unless it were, that Appetite being more in both. from the Air of such Places, it hapned, that by the care of Parents in the Education of Children, they seldom wanted Food of some sort or other, enough to supply Nature, and satisfie Appetite, during the Age of their growth, which must be the greater, by the Sharpness of Hunger, and Strength of Digestion in drier Airs: For Milk, Roots, and Oats, abound in such Countries, though there may be scarcity of other Food or Grain. But the Cattle, from the Shortness of Pasture and of Fodder, have hardly enough to feed in Summer; and very often want in Winter, even necessary Food for Sustenance of Life; many are starved, and the rest stunted in their growth, which after a certain Age never advances." And this experienced and accomplished observer goes on to observe that—"Whether this be a good Reason, or a better may be found, I believe that one Part of it will not be contested by any Man that tries; which is, that the open dry Air of hilly Countries gives more Stomach than that of Plains and Vallies, in which Cities are commonly built, for the Convenience of Water, of trade, and the Plenty of Fruits and Grains produced by the Earth, with much greater Increase and less Labour, in softer than in harder grounds."

The same accomplished author and statesman has recorded the following:—

“The late *Robert Earl of Leicester*, who was a Person of great Learning and Observation, as well as of Truth, told me several Stories very extraordinary upon the subject; one . . . was of a Beggar at a Bookseller’s Shop, where he was some Weeks after the Death of Prince *Henry*; and observing them that passed by, he was saying to his Company, That never such a Mourning had been seen in *England*: this Beggar said, No, never since the Death of Prince *Arthur*. My Lord *Leicester* surpris’d, ask’d what she meant, and whether she remember’d: She said, Very well: And upon his more curious Enquiry told him that her Name was Rainsford, of a good Family in *Oxfordshire*: That when she was about twenty Years old, upon the Falseness of a Lover she fell distracted; how long she had been so, nor what passed in that Time, she knew not: that when she was thought well enough to go abroad, she was fain to beg for her living: that she was some Time at this Trade before she recovered any Memory of what she had been or where bred: that when this Memory returned, She went down into her Country, but hardly found the Memory of any of her Friends she had left there; and so returned to a Parish in *Southwark*, where she had some small Allowance among other Poor, and had been for many Years; and once a Week walked into the City, and took what Alms were given her. My Lord *Leicester* told me, He sent to inquire at the Parish, and found their Account agree with the Woman’s: Upon which he ordered Her to call at his House once a Week, which she did for some Time; after which He heard no more of Her. This Story raised some Discourse upon a remark of some in the company, That Mad People are apt to live long. They alledged Examples of their own Knowledge; But the Result was, that if it were true, it must proceed from the Natural Vigour of their Tempers, which disposed them to Passions so violent as ended in Frenzies: And from the great Abstinence and Hardships of Diet they are forced upon by the Methods of their Cure, and Severity of those who had them in Care; no other Drink but water being allowed them, and very little Meat.”

(*To be continued*).

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Deformities of the Fingers and Toes. By WILLIAM ANDERSON, F.R.C.S.; Surgeon to St. Thomas's Hospital; Examiner in Surgery at the University of London, &c. London: J. & A. Churchill. 1897. Pp. 150.

THIS short volume, though it be, as the author says, unambitious in its scope, is certainly one of the most interesting and instructive we have read for some time. The first section of the book deals with deformities of the fingers, and commences with a very complete and, as far as possible, satisfactory account of Dupuytren's contraction. In discussing the pathology of the disease, the author points out how unsatisfactory are the various theories of previous writers. The influence of occupation, for example, he shows to have been at least over-estimated. He himself inclines strongly to an original view, that the condition is due to microbic agency. It has long been known that the disease does not lie primarily in the tendons, and Mr. Anderson now shows that the palmar fascia is only secondarily involved, and that the lesion "is an inflammatory hyperplasia commencing in the skin and subcutaneous tissue."

Much valuable assistance is given to the reader here, as also in other parts of the book, by anatomical descriptions, more complete and satisfactory than are to be found in the usual text-books.

The treatment is fully discussed, and the subcutaneous method of Mr. Adams is given the first place amongst operative measures. Hypnotism, as a remedy, is spoken of with the contempt it merits.

"Hammer-finger" is a condition with which probably few are familiar, but the account of its pathology is interesting owing to its relationship to the similar common deformity in the foot. The author shows that the defor-

mity is "due to imperfect evolution of ligaments." "The ideal constitution of a joint depends upon the existence of a certain ratio between the growth of bone and that of ligament." "We may define hammer-finger as the result of a developmental irregularity of the first or second interphalangeal joint (rarely of the metacarpo-phalangeal joint) by which the anterior fibres of the lateral ligaments become prematurely tense during extension, and so check that movement before it attains its normal physiological limit. It is precisely analogous to hammer-toe."

In discussing the treatment of hammer-toe the preference is given to excision, where an operation is necessary; the author's method of carrying out this little operation is given in detail.

Among other descriptions of special interest is one of a case of tendo-vaginitis of the bursal sheath of the flexor tendons, and another of a rare condition known as trigger-finger, with which we were not before acquainted. Indeed, in a perusal of the volume the reader will conclude there are more things in fingers and toes than are dreamt of in his philosophy!

The book throughout is eminently practical as well as entertaining, and we most strongly recommend it to all practitioners and, at the same time, to senior students, if for nothing else, for the surgical anatomy it contains.

The Means by which the Temperature of the Body is maintained in Health and Disease. Being the Croonian Lectures delivered before the Royal College of Physicians of London on June 15th, 17th, 24th, and 28th, 1897. By W. HALE WHITE, M.D., F.R.C.P.; Physician to and Lecturer on Pharmacology and Therapeutics at Guy's Hospital. London: J. & A. Churchill. 1897. Pp. 77.

THESE learned and very original lectures are reprinted from *The Lancet*, June 19 and 26, and July 2 and 10, 1897. Unfortunately they are reprinted in the very same type, which is too small for comfortable reading, and looks badly when set in the relatively large pages of the book. Having said so much we have exhausted our adverse criticism, and

are free to say that Dr. Hale White's "Croonian Lectures" are a valuable and unique contribution to the all-important subject of pyrexia.

The author arrives at three main conclusions as regards the problem of the variations in the production and loss of heat in pyrexia. First, in man at least, pyrexia is not produced by the same method in all fevers; sometimes the rise of temperature is due to an increased production of heat, and sometimes to a diminution of the loss. Secondly, in the present state of our knowledge, animal calorimetry is very difficult, and the results obtained from calorimeters must be received very guardedly, especially when they are applied to man. Thirdly, in some forms of pyrexia in which the production of heat is increased, the metabolism leading to this takes place in the proteid tissues of the body, and probably the metabolic processes concerned in a pathological rise of temperature are different from those of health.

Some very remarkable and suggestive points are brought out by the author in these lectures. For example, in the first lecture, Dr. Hale White discusses the question whether there is any evidence that pyrexia may be due to a variation in the specific heat of the body. From experiments on hibernating dormice, which he admits yield results that it would be unfair to definitely apply to a man suffering from fever, Dr. White thinks that at present there is no evidence that in man the rise of temperature is due to a diminution of the specific heat of the body.

The second lecture contains an account of temperature raised by a hot bath, a Turkish bath, damage to the corpus striatum, and fever, respectively. From Dr. White's observations it appears that in some fevers the pyrexia is, in part at least, due to a diminished loss of heat, in others this is of but slight importance, and then the production of heat is very great.

The third lecture deals with the difficult subject of calorimetry; and the fourth, with what may be called the chemical method of studying the amount of heat produced under different conditions. The author's work in this direction has been (according to himself) slight, for the only experiments he has done relate to the gaseous exchange of rabbits in which

pyrexia had been induced by cerebral lesions, and to that of hibernating dormice. He quotes May's experiments, including those which prove that the administration of sugar saves the destruction of albumin and fat which goes on in starvation and also in fever. This is a practical point of the greatest value to clinical physicians.

Even more iconoclastic, yet not the less true, are the author's conclusions on antipyresis. "A few years ago," he writes, "much was hoped from the antipyretic drugs—antipyrin, acetanilide, and phenacetin; and if it could have been shown that they distinctly improved the condition of the fevered patient, it would have been a strong argument against the view that pyrexia is a defensive mechanism. The reverse, however, is the case, for they are not now often employed as antipyretics, and in a discussion on pyrexia and its treatment, which took place at the Bristol Meeting of the British Medical Association, held in 1894, speaker after speaker got up and said that, as a general rule, it did more harm than good to treat the pyrexia of fever. Some few fevers are treated by agents which lower the temperature, but these very fevers are instances of the exception proving the rule. Ague is treated by quinine, the temperature falls and the patient is better. This, however, is not because the quinine is an antipyretic, but because it is a poison to the *Plasmodium malaricæ*; the patient's temperature falls because the pyrexial agent is destroyed." The same is true of syphilitic fever and mercury, of rheumatic fever and the salicylates.

Loewy and Richter (*Berliner klin. Wochenschrift*, 1895, No. 75) caused a rise of temperature in rabbits by puncture of their corpora striata; they then infected them with the bacilli of diphtheria, fowl cholera, swine erysipelas, and pneumonia. With very large fatal doses the animals thus wounded lived longer than the control animals. They recovered after a dose two or three times as large as that necessary to kill an ordinary animal. When a local injection of swine erysipelas was made into a rabbit's ear, the local reaction was most marked in those animals in which the corpus striatum had been punctured, but they invariably got quite well. Dr. White admits that all these observations do not prove that pyrexia is a protective mechanism, but they

certainly suggest that it is—in this sense the Germans have long spoken of “*das Heil-fieber*.”

It struck Dr. White some time ago that, if pyrexia is a protective mechanism, it might be a good thing to administer to fevered patients *drugs that would raise their temperature*, if, before doing this, it could be shown by laboratory experiments that such drugs have the power of diminishing the severity of fevers. There are many “pyretic drugs,” such as belladonna, cocaïn, strychnin and caffen. “But by far the most important drug for raising the bodily temperature is β —tetrahydronaphthylamine”! Perhaps such a method of treatment is still in advance of the age; nevertheless, Dr. White’s statements are worthy of thoughtful consideration by clinical physicians.

Surgical Diseases of Children. By EDMUND OWEN, M.B., F.R.C.S.; Senior Surgeon to the Hospital for Sick Children, Great Ormond-street. With Five Chromo Plates and 120 Engravings. Third Edition, revised and enlarged. London: Cassell & Co. 1897. Pp. 490.

THE account which Mr. Owen gives of the various surgical diseases of children is in accord with the best teaching of the present day.

The book has, perhaps, lost somewhat in interest, owing to the condensation necessary to bring so extensive a subject within such narrow limits, and occasionally the loss has been not only in interest but in usefulness, as in the very sketchy account given of “*coxa vara*.”

The introductory remarks are in some instances trivial, and such a passage as the following is scarcely in keeping with the scientific spirit which pervades the main part of the book—“In private practice I keep out of sight until the child is insensible, and allow the anæsthetist to bear the charge of having ‘hurt’ him; in the matter of subsequent dressings, I come as a sympathetic friend to heal the wound which ‘the other man’ has inflicted.”

The use of iodoform is called in question “even in the treatment of tuberculous disease.”

“The less medicine given to children the better” seems

to us excellent advice, but a perusal of the book leads one to suppose that the author has quite an extraordinary faith in cod-liver oil and iron.

Some of the best parts of the book are those dealing with bone diseases, and Mr. Owen's views regarding treatment we think altogether sound. He speaks unfavourably of laminectomy as an operation for paraplegia due to tubercular spinal disease, and his remarks concerning the forcible straightening of the spine will meet with general approval. "It appears to me to be a method of treatment equally unprecise and unsurgical, equally rash and speculative."

Tubercular disease of the knee and hip has been carefully described. Excision should be regarded as a last resource, and in both hip and knee the results are not encouraging when submitted to the test of time.

The author's views concerning the treatment of acute intussusception are boldly given—"I believe that the results of treatment would be far better if no subject of the lesion had ever been cured by massage and injection."

The volume is, on the whole, well illustrated, and is sure to continue attractive, particularly to senior students.

Notes on the Special Hygiene (Physical and Mental) of Childhood and Youth. By THOMAS MORE MADDEN, M.D., F.R.C.S.E., M.A.O.; Obstetric Physician and Gynæcologist, Mater Misericordiæ Hospital, &c. Dublin: Fannin & Co. 1897. Pp. 68.

THIS essay, which can be read in a little over half-an-hour, aims at "summarising certain general principles in the correction of popular errors" regarding the rearing of children.

It is a revision of former lectures and papers. Dr. Madden takes a bird's-eye view of an enormous subject which involves many social problems. The history of children from birth to marriage is difficult to condense into 68 elementary pages. Moreover, it is a subject upon which every mother will argue. We think Dr. Madden has exercised great tact in this pamphlet, but it is not a truly scientific medical work—it is evidently intended for public or general reading. A medical

book written for the public is a most difficult and dangerous literary undertaking, but we can congratulate the author on his success in placing his views before them in such a way that the dignity of the profession has not been compromised, while they should much profit by its pages. The advice given is of the simplest kind. It is a pleasure to read Dr. Madden's writing, and his thoughts are expressed in some beautiful sentences. The paragraphs mainly deal with mortality, suckling, artificial feeding, washing, exercise, education, and dress.

In a work of the kind we would prefer not to have discovered the words, "cephalitis," or "cerebritis," on page 40; while we think that, on page 9, the mixture of "two to three ounces of limewater to a pint of milk, with a little sugar of milk and a few drops of cream," is too strong for most infants under three months. A little more water and more cream would be, perhaps, safer advice.

The great value of the book lies in its absolute harmlessness in the hands of the public.

The Serum Diagnosis of Enteric Fever by the Dried-Blood Method. By J. C. DA COSTA, JR., M.D., Philadelphia.
Reprinted from the *New York Medical Journal* for August 21, 1897. Pp. 30.

THIS is a clear and well-written account of the serum diagnosis of enteric fever—in part, historical; in part, experimental and practical. Dr. Da Costa has good reason to speak with authority on the subject, for he has tested two hundred and forty-five cases of all kinds with the dried-blood method, the *technique* of which he describes. From these cases he concludes that in more than 90 per cent. of cases of enteric fever a positive reaction may be obtained from the fourth to the seventh days of the disease inclusive. In more than 3 per cent. of cases of diseases other than enteric fever, reactions are produced which are indistinguishable from typical typhoid reactions. Positive reactions are occasionally met with in the case of individuals who have had enteric fever some months previously, but who are in good health at the time of the examination. Negative reactions are obtained

with the blood of healthy persons who have not had enteric fever recently. Typhoid blood which has been kept in a dried state for eighty-six days will produce a typical reaction.

A very full bibliography is appended to Dr. Da Costa's instructive paper.

Diseases of the Eye: A Manual for Senior Students. By J. ARTHUR KEMPE, F.R.C.S. Edinburgh: E. & S. Livingstone. 8vo. Pp. 56. [No date.]

THE author of this very unimportant little book says, in his preface, that he has ventured to produce this little manual in order to help senior students in preparing for their Final Examination. We cannot see the advantage of this form of book. It is too imperfect to be a safe guide to either student or practitioner. It is not even written in good English. The opening sentence is: "Ophthalmia signifies a disease of the conjunctiva which covers the eye and is reflected on to the upper and lower lids."

Eye-Strain in Health and Disease; with Special Reference to the Amelioration or Cure of Chronic Nervous Derangements without the aid of Drugs. By AMBROSE L. RANNEY, A.M., M.D. Illustrated with thirty-eight wood engravings. The F. A. Davis Company. 1897. Royal 8vo. Pp. 329.

THE author, in his preface, states that the volume comprises the substance of several monographs previously published by him; to these he has added new matter and the histories of many typical cases in detail, with the view of illustrating some remarkable results of eye-treatment alone upon various forms of nervous disturbances that have persisted for years and failed to yield to any other form of treatment.

The views which the author supported in his *Lectures on Nervous Diseases*, published in 1888, relative to the effects of eye-strain upon the development of headache, neuralgia, sleeplessness, chorea, epilepsy, nervous prostration and insanity, are reiterated with clinical evidence to sustain them. Time has but strengthened the author's early convictions.

The author calls special attention to the following points,

viz.:—(1) None of the cases reported took any drugs while under his care; (2) they were all chronic cases which had received no benefit from medication under skilful hands, and (3) many of them were made well by eye-treatment alone.

The first chapter is on “The bearings of eye-strain upon the duration of human life.” He tries to show how eye-strain may in reality be (what is often called a “constitutional taint”) the real originator of a gouty or strumous diathesis, the real “predisposing cause” of many of the so-called constitutional or inherited diseases. The predisposition that is inherited is the predisposition to eye-strain, the ametropia or the heterophoria, not the predisposition to gout or tubercle, and it is the nervous exhaustion consequent upon this eye-strain that allows the gouty or tubercular condition to arise and flourish. So also is it, he thinks, with regard to epilepsy, chorea, insanity, &c., in certain individuals—without the exhaustion caused by the eye-strain the vitality of the organs might be enough to keep them working smoothly, but with the tax upon their energies caused by the eye-strain they break down.

In this connection he says it should constantly be borne in mind that no two cases exhibit identical manifestations of nervous depression or irritation—some patients, who are suffering from such conditions, manifest the effects in physical, others in mental, disturbances. The heart’s action may be alone disturbed in some cases, the stomach may give out in others, some may complain alone of spasmodic muscular troubles, some may notice its effects in the eyes, some are rendered sleepless, others may suffer from more or less persistent pains, a few complain alone of skin disturbances, and so on throughout the different parts of the entire human organism.

Chapter II. describes “The tests of vision and ocular movements.”

Chapter III. is on “Eye-strain as a cause of headache and neuralgia,” with remarks concerning the prevalent fallacies respecting these conditions, and a tabulated record of fifty consecutive cases of these conditions treated without drugs.

Chapter IV. is on “The eye-treatment of chorea,” with a critical review of certain factors that may lead to spasmodic diseases, and the treatment of such conditions without drugs.

Chapter V. is on "Sleeplessness; some facts relating to its causes and cure."

Chapter VI. is on "Eye-strain as a cause of chronic gastric and digestive disturbances." In this connection he lays down the following propositions:—"1. Eye-strain (either from errors of refraction uncorrected, or from some abnormality of adjustment of the eye muscles) may, and often does, cause chronic and intractable disturbances of the stomach, liver, and intestine. 2. Chronic intestinal and gastric disturbances may be, and often are, companions to much graver disturbances of the general nervous system that are due to the same condition—viz., eye-strain. 3. Eye-strain may exist without symptoms referable to the eyes themselves, of which the patient is conscious."

Chapter VII. is on "The eye-treatment of epileptics," with a tabular statement of twenty-six cases so treated.

Chapter VIII. is on "The eye-treatment of nervous prostration and insanity."

Chapter IX. is on "The surgical treatment of anomalies of the ocular muscles (heterophoria);" and the tenth and last chapter is on "A few practical hints relative to eye-strain as a cause of abnormal eye conditions."

This interesting and suggestive book is well got up, well printed, and very readable. If we are not prepared to accept all his premises, or the conclusions he draws from them, we at least consider that the subject has not, in this country, received as much attention as it seems to deserve, and we recommend this work to all those interested in the subject with which it deals.

On Deafness, Giddiness, and Noises in the Head. By EDWARD WOAKES. Fourth Edition. London: H. K. Lewis. 1897. 8vo. Pp. 224.

THIS book is a contribution to the literature of a very obscure subject. The author gives an account of the pathology of the subject, so far as at present understood, and tries to elucidate it further by his own observations, particularly on reflex causes. He makes a praiseworthy effort to limit the abuse of the word "subjective," as applied to the affections

in question, for it often enough means not that the symptom complained of is without objective cause, but that the cause is not evident to the practitioner.

As is well known among rhinologists, Dr. Woakes' hobby is the ethmoid bone, and "necrosing ethmoiditis" comes in for a large share of responsibility in the causation of tinnitus. Without going the length of saying there is no such condition as necrosing ethmoiditis, we hold that the necessity for the term does not exist, and it is rushing quite too much into the extreme to father tinnitus, without other apparent objective cause, on an average ethmoid bone.

In criticising Gruber's ovoids for treatment of furuncle and abscess of the external meatus, the author condemns them unjustly. He says (page 163):—

"The author would suggest some other menstruum than gelatine (*e.g.*, petroleum gelatine) which is the proper culture medium for the particular coccus of furuncle, and it seems scarcely wise, however convenient in practice, to provide the most acceptable medium for the production of the pest in question."

It is well known that Gruber's ovoids are composed not with gelatine but with gelato-glycerine as a basis, and the antiseptic effect of glycerine, which is present in large quantity, should have a deterrent effect on bacteria. That it has so is obvious from the fact that the ovoids will keep indefinitely. We ourselves have kept them unaltered for years without special protection.

Notwithstanding some few points like those we have just taken exception to, the book will be in many respects a valuable addition to the practitioner's library.

Incorporated Dublin Total Abstinence Society Diamond Jubilee Celebration. Brief History of the Society. By E. MACDOWEL COSGRAVE, M.D., President. Dublin: Corrigan & Wilson. 1897. Pp. 20.

NEATLY printed and tastefully and artistically brought out, this pamphlet gives an interesting sketch of the history of the Dublin Total Abstinence Society through the sixty years of its existence. Incidentally, also, an account is given of the Dublin Coffee Palace, founded in 1875 under the auspices

of the Society, and as the outcome of strenuous exertions by Mr. Thomas Willson Fair, who is still its Honorary Secretary.

The booklet is illustrated with portraits of the chief officers of the Society, both past and present, and includes a notice of visits paid to Dublin by two celebrated "teetotallers"—Father Mathew in March, 1840, and Sir Benjamin Ward Richardson, M.D., F.R.S., in October, 1877.

It is worth noting that the crusade against intemperance was, in the first instance, directed against the use only of ardent spirits, and, at that stage of the conflict, declarations in favour of the movement were (in 1830) obtained from the Lord Mayor, Sheriffs, and other public officials, as well as from many "Dublin Doctors." The latter document is signed by most of the first physicians and surgeons of the day practising in Dublin, but the majority of the signatories were by no means total abstainers themselves, either then or afterwards.

The worthy President, Dr. E. MacDowel Cosgrave, has filled his office with conspicuous zeal and ability for no less than fifteen years; and it is a somewhat remarkable circumstance that two of the founders and leading supporters of the Society are still alive and in its ranks—Henry Brown, J.P., Town Councillor of the City of Dublin, and Adam Woods. Mr. Brown was the first Honorary Secretary, and Mr. Woods was the first Honorary Treasurer of the Society after its institution in 1836. They are striking "object-lessons" of longevity among total abstainers.

The New Sydenham Society's Lexicon of Medicine and the Allied Sciences (based on Mayne's Lexicon). Twenty-third Part—Puke-Scap. London: The New Sydenham Society. 1897. Vol. CLX.

AFTER a long interval, we welcome the appearance of another instalment of this work. It brings the Lexicon well into the letter S., and we presume that only three or four additional parts will be required to complete the alphabet. The First Part of the Lexicon was issued in 1878, so that nearly twenty years have been occupied in publishing twenty-three Parts. There can be no excuse for such dilatoriness, which does not reflect any credit on the Society.

PART III.

SPECIAL REPORTS.

REPORT ON PUBLIC HEALTH.^a

By SIR CHARLES A. CAMERON, M.D.; D.P.H., Camb.; M.R.C.P.I.; F.I.C.; Ex-President, Hon. Dip. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and ex-President of the Royal Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee.

SANITARY AFFAIRS IN JAPAN.

FOR many years past I have been, through the courtesy of the Central Sanitary Bureau of Japan, the recipient of interesting Medical and Sanitary Reports relating to that remarkable country. I have just received the "Annual Report of the Central Sanitary Bureau attached to the Home Department of the Imperial Japanese Government, for the years 1893 and 1894" (Tōkyō, 1897). I shall give a few of the more interesting statistics and facts contained in this Report.

In 1894 the population was 42,426,921, being an increase of 365,945 as compared with 1893.

The birth-rate was 28·49 per 1,000 of the population. The lowest rate, 23·18, was in Tōkyō (the capital), and the highest, 36·76, in the Prefecture of Aomori. There was one

^a The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

still birth for every 10·63 mature births. There were 14·75 births per 100 couples.

The death-rate in 1894 was 19·99 per 1,000 persons; the birth-rate was 8·5 in excess of the death-rate. During the previous 10 years the excess of births over deaths ranged from 0·67 in 1885 to 10·46 in 1888. Of the 848,204 deaths in 1894, 78,514 were from “contagious and infectious diseases.”

In 1894 the marriages numbered 351,144, or in the ratio of 8·4 per 1,000 of the population; but, alas! in the same year the divorces numbered no fewer than 112,362. In facilities for obtaining divorces Japan throws the United States and even Roumania into the shade.

The town population of Japan is very large, and is rapidly increasing. There are 53 towns, containing in each more than 25,000 inhabitants. Tōkyō contained, in 1894, 1,242,224 inhabitants, and Ōsaka—488,937.

Either the examination for medical qualifications is extremely strict, or the education of the candidates is very imperfect, as will be seen by the following statistics:—

There were, in 1894, 4,721 candidates for the primary examination, and 2,847 for the final; of the former 437 and of the latter 357 passed. The candidates for dental diplomas were not more successful. It seems probable that the “stiffness” of the examination was chiefly the reason why less than 10 per cent. of the candidates were successful, for the Japanese are an intelligent and industrious people, and their medical students are not likely to be idlers.

The total number of physicians on the Medical Register in 1894 was 42,551, or in the ratio of one for every 997·08 of the population.

Japan has 2,869 registered pharmaceutical chemists, 16,106 druggists, and 1,859 manufacturers of medicinal substances.

In 1894, 47 medical men were prohibited or suspended from practising for various breaches of regulations and for “mismanagement” in the treatment of disease.

A list of cases of poisoning from various toxic agents is given. For 115 deaths from this cause lobster (“tinned?”)

is held responsible. The total deaths due to poisoning in 1894 number 371, and of cases 916.

TYPHOID FEVER IN MIDDEN TOWNS.

In several previous reports, and in papers published in this journal, I have endeavoured to prove that in Dublin at least typhoid fever is chiefly a disease associated with the soil. Not that I believe it is inherent in soils, but simply that by certain local conditions the soil may and does become the nursery of the typhoid bacillus. For centuries the excreta of the population of Dublin was deposited in petties, ashpits, and middens, and often kept there for months before removal. As a result the soil became saturated with fæcal matter, for in the vast majority of cases the floors of the petties, ashpits, and middens were the loose soil, and not watertight flags or concrete. Since I became the chief officer of the sanitary department of the Corporation of Dublin I have waged an incessant war against petties and ashpits, and but few of them now remain in the city, having been replaced by water-closets.

It is to be regretted that the general adoption of the water carriage of excreta in Dublin has not been followed by a decided decrease in the amount of typhoid fever, but I am sanguine that ultimately a marked decrease will take place. To some extent there has actually been a reduction in the mortality ascribed to typhoid fever during the last four or five years. It must be borne in mind that it requires a long time before a filth-polluted soil can be converted into a clean one.

A very interesting report on the connection between middens and typhoid fever has recently been presented to the Corporation of Sunderland by their able Medical Officer of Health, Dr. Scurfield. He points out that excreta, &c., are dealt with by three systems—(1), the midden (petty or privy); (2), the pail; (3), the water-closet. He shows conclusively that in the midden towns there is, on the average, a high typhoid fever death-rate. In the following table the average annual death-rate from typhoid fever in 33 midden towns is given:—

List of Thirty-three Towns in which the Number of Privy-Middens Exceeds or Approximates Five per cent. of the Population.

Name of Town	Population	Persons to an Acre in 1894	Per-centage of Privies to Popula-tion	Average Annual Death-rates Per 1,000 (1890-95)		
				From all Causes	From Fever	From Diarrhoea
Aston Manor -	72,898	77.5	14	16.3	.13	1.5
Ashton-under-Lyne -	40,463	31.1	10	22.9	.21	.83
Barnsley -	35,427	15.7	11	22.0	.42	1.44
Belfast -	275,000	40.4	11	25.1	.57	1.12
Bolton -	118,303	50.2	12½	22.9	.29	1.32
Bradford -	223,985	20.8	13	19.8	.15	.87
Burnley -	90,000	24.6	5	21.5	.26	1.48
Burslem -	32,581	13.0	12	22.3	.19	1.18
Chatham -	31,657	7.1	11	17.9	.18	.5
Darlington -	38,060	9.9	16	16.6	.32	.67
Derby -	98,795	28.6	7½	17.6	.18	.67
Dudley -	47,000	12.8	10½	21.9	.20	.9
Gateshead -	85,692	29.7	7	19.7	.25	1.03
Hanley -	56,547	32.4	6	19.9	.27	.88
Hull -	212,679	25.9	22	20.0	.24	1.33
Ipswich -	58,610	7.4	16	19.7	.18	.9
Leeds -	388,761	18.0	5	21.0	.22	1.09
Middlesbrough -	80,300	29.5	4½	20.1	.42	.89
Norwich -	105,000	14.0	11½	19.6	.26	.87
Preston -	111,425	27.2	17½	25.0	.31	2.23
Rotheram -	46,000	7.5	7½	17.8	.42	1.20
St. Helens -	77,690	10.7	6½	22.4	.48	1.26
Salford -	205,828	39.8	7	24.0	.39	1.3
Scarborough -	33,776	14.9	23	18.1	.24	.66
Sheffield -	338,316	17.2	6	21.7	.22	1.20
Smethwick -	36,170	21.0	21	15.2	.14	.38
South Shields -	87,045	47.3	12½	20.2	.24	.93
Sunderland -	136,000	47.5	10	22.3	.62	1.2
Stockport -	73,000	33.7	8	23.9	.27	1.47
Walsall -	75,000	10.2	9½	20.1	.21	1.25
West Bromwich -	60,000	10.3	11½	24.3	.25	1.12
Widnes -	30,612	10.0	16½	21.2	.62	.9
York -	67,926	18.7	11½	18.4	.34	1.26
Average -	—	—	—	20.7	.26	1.08

In one of these towns (Aston Manor) the extremely low death-rate of 16.3 per 1,000 from all causes is in remarkable contrast to its high death-rate from diarrhoea—namely, 1.5.

In the following table the typhoid fever death-rate in 24 water-closet towns is given:—

List of Twenty-four Water-closet Towns.

Name of Town	Population	Persons to an Acre in 1894	Average Annual Death-rates per 1,000 (1890-95)		
			From all Causes	From Fever	From Diarrhoea
London - -	—	—	20·2	·14	·64
Edinburgh - -	270,588	43·8	18·3	·15	·26
Dublin - -	245,001	65·2	26·1	·44	·7
Bristol - -	226,578	50·8	18·9	·10	·44
Bournemouth - -	42,000	19·7	13·8	·07	·23
Brighton - -	118,715	46·9	18·2	·10	·64
Cardiff - -	148,890	24·6	19·3	·14	·76
Carlisle - -	39,176	19·8	19·6	·08	·28
Cork - -	76,000	33·5	23·3	·22	·46
Cheltenham - -	50,000	9·9	16·9	·10	·25
Coventry - -	51,720	18·0	17·6	·12	·63
Croydon - -	109,700	12·4	15·2	·09	·44
Eastbourne - -	34,969	7·5	13·0	·06	·59
Exeter - -	37,404	19·9	20·0	·21	·32
Hastings - -	52,223	30·7	15·2	·06	·19
Leamington - -	27,116	9·8	16·9	·04	·16
Liverpool - -	507,230	97·3	25·9	·37	1·09
Oxford - -	53,000	10·1	15·3	·04	·3
Plymouth - -	86,772	57·1	20·6	·17	·62
Portsmouth - -	159,251	39·6	18·1	·25	·78
Walthamstow - -	54,400	13·6	15·2	·17	·7
West Ham - -	217,113	50·6	17·9	·21	·81
Willesden - -	70,000	18·1	14·1	·11	·59
Worcester - -	42,988	13·7	20·2	·17	·6
Average - -	—	—	18·3	·15	·52

The striking facts proved by these tables is that, whilst in the midden towns 26 persons per 100,000 of the population die annually from typhoid fever, only 15 per 100,000 of the population die from this disease in the water-closet towns. In the latter, too, the death-rate from all causes is 2·4 per 1,000 below the rate in the midden towns.

The Medical Officer of Health for Nottingham, in his report on the health of that town for 1896, gives the following remarkable statistics:—

ENTERIC FEVER IN NOTTINGHAM, 1887-96.

Cases and proportion of cases in houses furnished respectively with pail closets, midden-privies, and water-closets.

1887.

35,796 houses with pail closets, 369 cases = 1 case in 97 houses.

1,598 houses with privies, 45 cases = 1 case in 35 houses.

6,000 houses with w.c.'s, 12 cases = 1 case in 500 houses.

1888.

37,038 houses with pail closets, 354 cases = 1 case in 104 houses.

1,532 houses with privies, 29 cases = 1 case in 52 houses.

6,091 houses with w.c.'s, 11 cases = 1 case in 554 houses.

1889.

37,539 houses with pail closets, 326 cases = 1 case in 115 houses.

1,343 houses with privies, 31 cases = 1 case in 43 houses.

6,200 houses with w.c.'s, 10 cases = 1 case in 620 houses.

1890.

38,133 houses with pail closets, 305 cases = 1 case in 125 houses.

1,195 houses with privies, 23 cases = 1 case in 52 houses.

6,280 houses with w.c.'s, 9 cases = 1 case in 694 houses.

1891.

38,571 houses with pail closets, 337 cases = 1 case in 114 houses.

880 houses with privies, 27 cases = 1 case in 33 houses.

6,295 houses with w.c.'s, 11 cases = 1 case in 572 houses.

1892.

38,834 houses with pail closets, 178 cases = 1 case in 218 houses.

711 houses with privies, 12 cases = 1 case in 59 houses.

6,360 houses with w.c.'s, 8 cases = 1 case in 795 houses.

1893.

40,097 houses with pail closets, 435 cases = 1 case in 92 houses.

600 houses with privies, 19 cases = 1 case in 31 houses.

7,000 houses with w.c.'s, 25 cases = 1 case in 280 houses.

1894.

40,414 houses with pail closets, 304 cases = 1 case in 133 houses.

500 houses with privies, 20 cases = 1 case in 25 houses.

7,000 houses with w.c.'s, 10 cases = 1 case in 700 houses.

1895.

40,532 houses with pail closets, 385 cases = 1 case in 105 houses.

460 houses with privies, 23 cases = 1 case in 20 houses.

7,100 houses with w.c.'s, 14 cases = 1 case in 507 houses.

1896.

40,225 houses with pail closets, 400 cases = 1 case in 101 houses.

440 houses with privies, 24 cases = 1 case in 18 houses.

7,200 houses with w.c.'s, 20 cases = 1 case in 360 houses.

These figures summarised show that in the ten years referred to 1 case of typhoid fever occurred per 120 houses with pails, 1 case per 37 houses with privies, and only 1 case per every 558 houses with water-closets. One clear inference from these statistics is that in Nottingham at least the defective water-closets—of which there must be many—and house-drains do not seem to spread enteric fever.

SEPARATION OF TYPHOID BACILLUS FROM BACILLUS
COLI COMMUNIS.

In the *Journal of Pathology and Bacteriology* for June, 1897, Mr. F. Wallis Stoddart contributes an important article on the above subject.

Bacteriologists have almost invariably failed in their attempts to detect typhoid bacilli in water, milk, and other liquids, in which there was the strongest reason to believe that the *materies morbi* of enteric fever existed. Messrs. Laws and Andrewes failed to discover them in the London sewers. Most surprising of all is the allegation of Dr. Nicolle in Constantinople, that they do not occur even in the dejections of persons suffering from the disease. Dr. Nicolle states that the presence of the colon bacillus is an insuperable obstacle to the identification of the typhoid micro-organisms. I can hardly believe that the excreta in enteric fever contains no typhoid bacilli, more especially as recent researches have clearly proved the existence of these organisms in the urine of the patients. If they are in the urine it seems incredible that they could be absent from the dejections.

Mr. Stoddart points out that the isolation of the typhoid bacillus consists of two stages—first, the destruction of the more delicate and numerous organisms by unfavourable methods of culture, and, secondly, by separating the remaining organisms by plating out. Mr. Stoddart believes that these processes are actually calculated to defeat their own object. He points out that sewage, and even polluted water, contains more organisms per cubic centimetre than can be dealt with in one plate culture of the usual size, even with the suppression of three-fourths of the total number. He deprecates, therefore, concentration as not only wholly unnecessary and a waste of time, but as likely to injuriously affect any typhoid bacilli that might happen to be present. The steps that

follow do not mend matters, for the much smaller number and less rapid growth of the typhoid bacillus, as compared with the other organisms associated with it, render the discovery of the few and scattered typhoid bacilli extremely difficult. Perhaps there may be only one typhoid colony amongst thousands or millions of other colonies. Mr. Stoddart's plan is to cause a greatly increased growth of the typhoid, as compared with other, bacilli, so that their greatly increased numbers may render their detection far less difficult than it is by existing methods. In his experiments in this direction he discovered a new cultural character of the typhoid bacillus, which, briefly stated, is as follows:—If any of the ordinary solid media be inoculated with the least possible quantity of a typhoid culture, and inoculated at a temperature at which it will just retain its consistency, no special local growth occurs, but the organisms spread throughout the whole mass of the medium. He prefers the temperature of 35°C . for the incubation of a 0·5 per cent. agar, or a 5 per cent. gelatine. He recommends the following directions to be observed—“A sufficient quantity of the agar gelatine is poured into a dish, or flat flask, to fill it to a depth of about 5 mm., sterilised and allowed to cool (preferably in the steriliser over night). Any drops of moisture condensed on the cover are drained off, and the centre of the medium touched with a platinum needle charged with the material to be examined. In order to prevent condensation, the dish is then enclosed in a larger one (a vastly preferable plan to inversion), and incubated at 35°C . for 24 hours, when about two-thirds of the dish will be occupied by a circular opalescence, which later extends throughout the whole dish. Under precisely similar conditions, *B. coli* invariably afford the usual surface plate of limited extent. If the inoculation is made from a mixture of both organisms there results a central disc of colon bacilli, surrounded by an opalescent halo of typhoid which yields perfectly pure sub-cultures.”

Mr. Stoddart says that he found typhoid bacilli from all sources to be identical, and that they differ essentially from all specimens of *B. coli*. As regards the latter bacillus, there is probably a well-defined organism (Escherich's, the discoverer's); but there seem to be a large number of closely allied species. A great number have been described by

Mr. M. H. Gordon, in the *Journal of Pathology* for last June.

FOOD AND DRUGS ADULTERATION.

Two members of the Government, Messrs. Chaplin and T. W. Russell, have introduced a Bill into the House of Commons to amend the Sale of Food and Drugs Act. The Bill is the outcome of the recommendation of the Committee of the House of Commons on adulteration. The Committee held 33 sittings, and examined 68 witnesses. They adopted unanimously a Report in which there were 23 recommendations. Messrs. Chaplin and Russell's Bill deals with three and a half of the recommendations, and it is altogether a scanty and insufficient piece of proposed legislation, and it is to be hoped that it will be withdrawn.

In making a few comments on this Bill I would first protest against the practice of repealing portions of Acts of Parliament for the purpose of replacing them by new provisions. There is a Sale of Food and Drugs Act, and an Act amending that Act, and now it is proposed to amend both Acts by a third one. This would cause a reference to all three Acts in every case of adulteration, and would impose unnecessary expense and trouble on the persons engaged in the administration of the Acts, and on the legal advisers of persons prosecuted under their provisions. Why not repeal the whole of the existing Acts, and re-enact any of their sections which it might be desirable to retain in the proposed new Act? The Acts relating to the sale and adulteration of margarine should surely be consolidated with these relating to food adulteration. The proposed Act in fact amends the Margarine Acts also. One new Act should take the place of the five existing statutes.

Should the present Bill be withdrawn and a much more comprehensive one introduced in place of it, a few of the clauses in the former should be retained. The present Bill provides a minimal penalty of £5 on conviction for a second offence within twelve months, and imprisonment in place of a fine, in the discretion of the magistrate, on a third conviction. The conviction may also be published in such manner as the magistrate may direct, and at the cost of the person convicted. The clause providing for the registration of itinerant vendors of milk is a useful one.

If a new Bill be introduced it would be desirable to insert a clause in it providing that drugs sold without declaration as to nature, quality, and strength should be presumed to have the composition prescribed in the British Pharmacopœia.

CONDITION OF THE BLOOD IN BONE TUBERCULOSIS.

In the "Transactions of the State Medical Society of California," for Session 1897, there is an interesting paper, by Dr. Philip King Brown, on a study of the blood in 73 cases of bone tuberculosis in children, with reference to prognosis and treatment. It does not seem clear why mesoblastic tissue in children is peculiarly susceptible to tuberculosis, whilst the epithelial structures are correspondingly immune; it is, however, true that in children the large bones and glands are very liable to tuberculous processes. Dr. Brown believes it not unreasonable to conclude that the blood of children is more easily affected by micro-organisms than the blood of adults, and he believes that the elements of the blood inimical to organisms do not originate in the glandular system. It is the feeble power of the blood of children to resist the onslaught of bacilli, that may account for the great susceptibility to contagious diseases characteristic of infancy.

Dr. Brown has investigated the change produced in the blood by tubercular processes in the bones, and by septicæmia. The cases which he investigated were 73, which he distributed into groups according to the situation of the processes, the presence or absence of a clinically demonstrable abscess, and the treatment. There were 26 cases of hip-joint tuberculosis with abscess, of which 6 were not operated on, 9 cases of hip-joint tuberculosis without abscess; 9 vertebral tuberculosis with abscess, and 11 without abscess; 1 vertebral and hip tuberculosis without abscess; 1 ankle-joint tuberculosis with abscess, and 12 knee-joint cases, 4 of them with abscess.

In 47 cases there was absolutely negative evidence as regards hereditary tendency, and in the other cases there was little evidence as to hereditary predisposition, which indeed Dr. Brown considers an insignificant factor in such cases. He also is of opinion that in the ætiology of such cases injury plays an insignificant part. The following table shows the condition of the blood in these cases:—

Hip-joint Tuberculosis with Abscess.

A.—OPERATIVE INTERFERENCE.

Case No.	Treatment	Hæmoglobin Per cent.	Erythrocytes	Leucocytes
1	Excision of hip in '96. Persisting sinus, Sept., '96	68 87	4,750,000 4,680,000	12,760 9,375
3	Excision, &c., '95. Sinus nearly healed, April 1, '97	55 76	3,960,000 4,760,000	12,500 5,940
4	Excision head of femur 1 yr. ago. Sinus nearly healed	50 98	3,720,000 4,400,000	14,150 7,500
6	Abscess opened and curetted in '92. Traction, sinus	40 47	3,960,000 4,360,000	26,850 14,060
8	Curettings and excisions	15	2,800,000	9,650
9	Excision of head of femur 4 yrs. ago. Curettings. Sinus discharging	87 85	5,140,000 5,140,000	13,300 15,625
10	Incision and curetting, Oct., '96. Sinus persisting	66 95	4,600,000 5,920,000	31,250 14,075
12	Curetting. Traction	38 68	4,133,600 5,680,000	6,650 6,595
13	Abscess opened and bone excised 1 yr. ago, before entering Ch. hosp. Sinuses	55 55	4,900,000 4,480,000	16,650 15,625
16	Abscess opened 1 yr. ago	75 100	4,200,000 5,040,000	6,650 12,500
23	Traction. Abscess opened Feb. 13, '97	68	5,260,000	11,250 12,185
24	Curetting. Traction. Abscesses now healed	80	4,800,000	8,780
30	Excision, Dec., '89. Curetting, Jan., '97. Healed, March, '97	68	4,480,000	12,500
33	Amputation at thigh	54	3,435,000	11,850
34	Excision and curetting, '92. Many curettings since. Wound healed March, '97	78	4,125,000	10,330
36	Traction, &c. Abscess opened Dec., '96	57 68	4,132,800 4,500,000	29,564 19,365
37	Excision, May, '96. Sinus persists	58 68	5,328,000 5,400,000	12,185 13,000
38	Discharging from 3 sinuses	48 37	5,120,000 4,120,000	25,000 13,800
41	Head of bone excised March 14, '97. Sinuses, &c., curetted	54	5,000,000	10,937
42	Excision and curetting in '95. Numerous curettings since; last on March 14, '97	68	4,560,000	9,357
44	Excision in '95, and abscess opened. Discharged in Jan., '97. Sinuses nearly healed	85	4,600,000	9,062
45	Traction 3 mos.; 3 curettings in next 4 yrs. Excision of head of bone, Feb., '96	92	5,640,000	9,062
46	Excision, Feb., '95. Curetting, Feb., '96	96	4,440,000	9,680
54	Opened Dec., '96. Wound healed, March 31, '97	67	5,840,000	8,595
55	Double excision. Sinus persisting	76	5,600,000	10,000
57	Excision in Oct., '92. Sinus persisting	81	4,800,000	10,250

*Abscess without Operation.**B.—NO OPERATIVE INTERFERENCE.*

Case No.	Treatment	Hæmoglobin Per cent.	Erythrocytes	Leucocytes
11	Traction	72	5,168,000	14,370
		85	4,640,000	9,685
21	Traction	84	4,937,600	13,000
		65	4,560,000	13,437
23	Traction. Abscess opened Feb. 13, '97	67	5,100,000	16,875
				15,450
				23,237
				22,250
		105		25,045
26	Traction	65	4,852,800	18,800
		62	5,000,000	12,190
29	Traction	80	5,200,000	10,000
		90	4,720,000	9,390
64	Traction	85	4,804,000	8,330

Hip-joint Tuberculosis without Abscess.

NO OPERATIVE INTERFERENCE.

5	Traction	63	4,260,000	20,000
		90	4,480,000	9,060
14	Traction	73	5,000,000	7,250
		67	4,120,000	12,185
25	Traction	84	5,264,000	6,875
28	Traction	78	3,665,000	10,330
		91	4,560,000	9,687
61	Traction	75	4,332,000	6,250
62	Traction; splint	55	3,040,000	9,375
68	Traction	66	4,600,000	15,000
		62	5,600,000	12,400
72	Traction	75	4,700,000	10,312
73	Traction, splint	63	5,360,000	8,545

Vertebral Tuberculosis with Abscess.

A.—OPERATIVE INTERFERENCE.

Case No.	Treatment	Hæmoglobin Per cent.	Erythrocytes	Leucocytes
7	Abscess incised and curetted, Feb., '96.	55	4,080,000	12,500
	Sinus persisting, Feb., '97	72	5,120,000	10,310
20	Jacket and traction to Feb., '97.	50	4,400,000	14,700
	Abscess incised, Feb. 15	55		16,250
		45	4,160,000	15,625
		53		23,248
				25,030
		47	4,026,400	11,800
		50	4,200,000	17,500
56	Abscess opened Feb., '96. Traction	50	4,440,000	13,125
		58	4,820,000	11,600
59	Abscess opened 3 times and curetted.	33	4,040,000	13,750
	Traction	32	4,040,000	19,200

B.—NO OPERATIVE INTERFERENCE.

19	Jacket; no traction	55	5,850,000	8,125
		85	5,520,000	7,500
20	Abscess incised and curetted, Feb. 15 (See Case 20 above).	—	—	—
22	Traction	80	4,640,000	7,150
		85	5,140,000	8,905
66	Traction	89	5,280,000	10,520
69	Traction	78	5,120,000	11,050
		73	5,600,000	10,000

Vertebral Tuberculosis without Abscess.

2	Splint traction	70	3,145,000	10,812
		85	4,720,000	8,750
17	Rest in bed; no traction	72	4,900,000	15,600
		85	4,960,000	7,500
18	Splint traction	90	6,536,000	6,250
		75	4,280,000	5,625
31	Splint traction	43	5,040,000	13,125
		73	5,280,000	15,600
35	Brace and jacket	76	4,532,800	7,500
40	Splint traction	52	5,080,000	17,440
		62	5,200,000	12,400
52	P. P. jacket and brace	57	5,600,000	14,375
		73	5,360,000	9,900
65	Rest in bed; no traction	82	4,400,000	10,625
67	Rest in bed; no traction	70	3,800,000	10,000

Tuberculosis at Ankle-joint.

ABSCESS AND OPERATION.

Case No.	Treatment	Hæmoglobin Per cent.	Erythrocytes	Leucocytes
47	Curetted May, '95, Feb., '96, Mar., '97. Sinus persisting	100	5,160,000	5,900

Tuberculosis of Hip-joint and Vertebral Column combined.

	<i>No Abscess. No Operation.</i>			
49	Traction, splint and jacket	67	5,040,000	6,875
	<i>Abscess and Operation.</i>			
43	Abscess opened Jan., '96, curetted Mar., '97	48 47	4,000,000 4,280,000	9,850 9,200
60	Numerous operations over Cyrs. Pat. died April 4, '97	47	2,830,000	5,100

Tuberculosis at or near Knee-joint.

	<i>No Abscess. No Operation.</i>			
15	Inclined plane and traction	75 66	4,080,000 4,360,000	11,350 7,500
58	Traction; extension	100	5,200,000	8,812
70	Aspiration; rest in bed	84	4,920,000	12,250
	<i>No Abscess. Operation.</i>			
27	—	53	4,600,000	15,625
32	Epiph. removed Jan., '97. Union by 1st intention, Mar. 16. Despite healing there is evident tub. of synovial membrane	70 73	5,162,200 4,600,000	10,515 12,200
39	Condyle trephined and foci removed; no pus	70 73	5,040,000 5,600,000	12,500 6,200
63	Trephining	72	5,200,000	8,650
71	Removal of tub. granulations from synovial membrane. Curetting	82	5,680,000	11,875
	<i>Abscess and Operation.</i>			
48	Amputation above knee and of several fingers. Innumerable abscesses now	46 50	3,880,000 5,600,000	11,875 14,800
50	Curetting Jan., '97	100	5,172,000	14,155
51	Tub. focus removed at op., May, '96. Discharged Mar. 30, '97, cured	87	4,680,000	9,065
53	Epiphysiotomy in Apr., '96. Sinus discharging	68	4,920,000	7,500

Dr. Brown assumes the normal number of erythrocytes in male children to be 5,000,000 per cubic millimetre of blood, and 4,500,000 in females, and hæmoglobin as normal at 90 to 100 per cent. in males, and as low as 80 in females. At birth leucocytes number 10,000 per cubic centimetre, and diminish to 7,500 at 6 years. An increase of 2,000 may be regarded as leucocytosis.

Dr. Stoddart does not agree with Holmes, of Denver, and others, that the leucocytes in pure tuberculosis of all forms present no very marked change as regards number. Dane holds that increased numbers of leucocytes in hip diseases indicate an abscess. Dr. Stoddart's experience does not confirm Dane's conclusion. The following is a *résumé* of Dr. Stoddart's conclusions :—

“I. No decrease in erythrocytes except in secondary anæmias of second and third stages, which come (*a*) in long-standing and extensive cases, (*b*) in very young children, and (*c*) in septic infections.

“II. Hæmoglobin is decreased in all cases, and in proportion to the same factors which influence the erythrocytes.

“III. The return to health is indicated by the tendency of blood to return to the normal.

“IV. Abscess formation not necessarily accompanied by leucocytosis. Slowly developing leucocytosis points to activity in the tubercular process. Rapidly developing leucocytosis points to secondary infection with pyogenic bacteria. Abscess may be absorbed without a leucocytosis having developed.

“In septic infection of wounds, leucocytosis is marked at first, and diminishes as the resistance of the child increases or decreases. If the diminution is accompanied by an increased anæmia, it is a sign of lowered vitality of the child.”

THE HOUSING OF THE VERY POOR.

It is now many years ago since I recommended the Corporation of Dublin to put in force the Acts of Parliament relating to the housing of the working classes. The recommendation was adopted, and a large number of dwellings for artisans and labourers have been erected by the Corporation and by the Artisans' Dwellings Company on land let to it for that purpose by the Corporation. With very few excep-

tions the dwellings erected for the working classes are let at from 2s. to 7s. 6d. per week, inclining more to the latter figure than the former.

There are thousands of people in Dublin who cannot afford to pay even 2s. a week for their dwellings. They occupy houses in courts, lanes, and alleys, and the lowest class tenements in the poorest localities.

The areas upon which large numbers of the very poor are located are often termed "unhealthy," which, indeed, they are. Several of them have been cleared by the Corporation, and upon their sites new dwellings have been erected, but the people who were evicted from those unhealthy dwellings have not returned to occupy the new houses, the rent of which they could not afford to pay. They have sought refuge in the lowest class houses in other districts, and in process of time the districts to which they have migrated will become as unhealthy as were those from which they had been evicted.

There are in Dublin thousands of poor people who are quite unable to pay more than from 1s. to 2s. per week for their dwellings. They comprise, amongst others, poor widows, with or without young children, peddlers, fish, fruit, and flower hawkers, charwomen, old men and women still capable of doing a little work, and the lowest class of porters and labourers. Many single men and women, and even families, earn less than 10s. per week. For the housing of such persons, neither Artisans' Dwellings Companies nor ordinary builders care to cater. They live in the worst class of tenement houses, their immediate landlords being, as a rule, poor, and unable, even if willing, to keep their houses in good order and clean. These landlords rent houses from owners (many of whom are absentees, who take no active interest in their properties) and sublet them at the highest rents they can get. In my Annual Report on the Health of Dublin for 1884 I gave a large number of tables showing the number of rooms, and of inhabitants, in several of the streets of Dublin, mainly consisting of tenement houses; also showing their valuation, rent, &c. In four of these streets the average valuation of the houses was £15 11s. 9d., and the average rent from tenants £48 18s. 8d. Comparatively well-to-do and very poor people occupied, in many cases, the same house. The

house, 36 Upper Mercer-street, valued at £18, was let to 11 families, whose combined rents amounted to £74 2s. Their occupations and earnings were as follow :—

Occupations			Weekly earnings.		
Jeweller, 1	...	...	£1	8	0
Carpenters, 2	...	...	1	14	0
Shoemaker, 1	...	...	0	15	0
Bricklayer, 1	...	...	1	12	0
Gardener, 1	...	...	0	16	0
Porters, 3	...	12s. to	1	5	0
Job Coachman,	...	...	uncertain		
Charwoman	...	...	0	5	0

This tenement house was in fairly good order ; but in many others the inhabitants were very poor, earning per family 5s. to 10s. a week. It is impossible to compel the landlords of the lowest class tenements to keep them in clean and good repair. Nearly 3,000 of the worst have been closed by magistrates' orders obtained by the Sanitary Authority, and many more would be closed if there were provision made for the reception of their ejected tenants—they cannot be turned out into the streets.

The homes of the very poor are the nurseries of infectious diseases, which spread from them into the houses of all classes. In the interest of the general welfare it is desirable to do something substantial for the improvement of the dwellings of these, the most dependent portion of the community. By providing them with plain but clean residences the amount of infection is decreased, sickness and consequent pauperism are lessened, and the health of the community, as a whole, is exalted.

The condition of the dwellers in narrow courts and lanes, and in squalid, decayed houses in the poorer streets is, indeed, pitiable, and urgently demands a remedy. The influence of such dwellings upon these tenants cannot fail to be bad, morally and physically. As to the physical effects, I shall quote a single verse from Mr. Bedford Leno's poem :—

As I gazed from out my window on the crowded court below,
Where the sunshine seldom enters and winds seldom blow,
I beheld a flow'ret dying for want of light and air,
And I said, " How fares it, brothers, with the human flow'rets there ?"

At my suggestion a committee has been formed for the purpose of securing the erection of houses containing tenements which can be let for 1s. 6d. per week. It is a difficult problem—how can such tenements be provided except by persons who do not ask any interest for their money? Still if the Corporation furnish sites at a nominal rent, I believe plain houses can be built containing, say, 8 tenements which could be let at 1s. 6d. per week, and yet admit of, say, 2 per cent. interest on the money expended in erecting them. One thing is certain—that a serious attempt will be made to provide in Dublin improved dwellings for the very poor.

BRUSSELS INTERNATIONAL EXHIBITION.

THE International Jury on Medicine and Pharmacy at the Brussels International Exhibition has awarded the *grand prix* and two gold medals to Messrs. Burroughs, Wellcome & Co., the manufacturing chemists of Snow Hill Buildings, London, for the high standard and scientific excellence of their fine chemical and pharmaceutical products.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

THE College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about One Hundred and Eighty Dollars, will be made on July 14, 1898, provided that an Essay deemed by the Committee of Award to be worthy of the Prize shall have been offered. Essays intended for competition may be upon any subject in Medicine, but cannot have been published, and must be received by the Secretary of the College, Thomas R. Neilson, on or before May 1, 1898. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1897 has been awarded to Dr. Joseph Collins, of New York, for his Essay entitled: "Aphasia."

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

INTRODUCTORY ADDRESS.

The General Medical Council. An Introductory Address delivered at the Meath Hospital, Monday, October 11th, 1897. By SIR PHILIP C. SMYLY, M.D., F.R.C.S.I.; Ex-President R.C.S.I.; Surgeon in Ordinary to the Queen in Ireland.

I GIVE you welcome to the "Old Meath." This opening of the session with an address is a very ancient ceremony. It is almost universal in medical schools and in hospitals. Every year the question is discussed, Shall this function come to an end? no one likes to be the first to break an old custom; so in rotation each member of the medical staff has to take his turn.

You may have noticed that the "Old Meath" is again in the hands of the builders, a necessary but painful process.

In the last few years much has been done to improve this hospital. Two large and healthy wards have been added—one for surgical, one for medical cases. The accommodation for the officials has been greatly improved. A large wing, separate from the main building, has just been finished. Now the operating theatre is being reconstructed. The exigencies of antiseptic or aseptic surgery demand radical changes in structure. The old operating theatre could not be made absolutely clean—surgically clean. The importance of this kind of cleanliness was brought before you this time last year by my colleague, Mr. Patteson, in his able address on Antiseptics. Those alterations are being carried out by the "Standing Committee," and it is to be hoped that the results will be worthy of the traditions of the "Old Meath."

We owe much to the governing body of this Institution. It is composed of educated men—many of them educated to business. The mind educated to business does business in a way no other

mind can do it. The busy methodical man does what comes before him and does it well. A poet says—

“Rise up and do thy whole life through
The duty that lies nearest.”

—(*Every Day of Life*, p. 152.)

That is what our Standing Committee do and have done twice every month for years.

So the “Old Meath” grows and is made more fit for its great work—first, giving aid and comfort to the poor in their hours of sorrow, suffering, and pain; second, giving the pupils the opportunity of learning their life-work—pupils who win laurels for themselves all round the world and reflect credit on the hospital where they were taught and love to call themselves “Old Meath men.”

It is to the “young Meath men” I have a few words to say.

The medical staff of this hospital are anxious not only to teach you—they desire to learn with you. The late Dr. Stokes used to begin his address on such occasions as this—“My fellow students.” It is as fellow students we obtain the greatest value from hospital work.

There have been many and great changes in the life of the medical student. In former days every teaching body, every examining body was a light to itself. One required a certain amount of previous education, another required a high standard, and another made no inquiry at all as to a knowledge of anything outside medicine. The qualifications given by one differed considerably from another. One body gave a licence in medicine only but examined in surgery; another gave a licence in surgery only but examined in medicine.

The military and naval authorities discovered that a medical or surgical degree or licence did not always mean sufficient education. They instituted their own boards of examiners. The attention of Government and the public was thus called to medical education, and Parliament passed the Medical Act of 1858, “An Act to Regulate the Qualifications of Practitioners in Medicine and Surgery.” The General Medical Council was formed and the Medical Register was confided to its care.

The Medical Council consists of a certain number of members (5) nominated by the Crown with the advice of the Privy Council, by the examining bodies—(8) for England, (7) for Scotland, (5) for Ireland, and (5) by the Profession at large.

In a recent number of the *Medical Magazine* the President of the College of Physicians of England gave a very interesting essay on

the General Medical Council, from the point of view of a member of that Council. He pointed out many errors, so often repeated that many believe them to be facts. One especially he shows to be a delusion—namely, that the Medical Council is a Parliament for the Profession, and can make laws for the guidance of the Profession.

More recently Dr. Bruce has given in the same magazine some essays on the reform of the Medical Council from the general practitioner's point of view.

I wish to-day to say a few words from the medical student's point of view.

The important work of the Council is done by two large committees—the Education Committee and the Examination Committee.

The duty of the Education Committee has been to investigate the curricula of the various licensing bodies not only in the three kingdoms, but also in the Colonies. To compare and select the best order for taking the subjects for study, and the years in which most advantage would be derived. The results of these deliberations are reported to the General Council. These reports are sent to the various bodies for remarks. The report and remarks are then sent back to the Committee, where suggestions for changes in curricula are formulated for the Council. After discussion in the Council these so-called regulations are sent to the various bodies. The results have been, so far, good for the student. Though many subjects have been added to the already enormous number of those a student must know something about, some have been relegated to the limbo they should never have been taken from.

The number of courses of lectures have been somewhat diminished, and their character changed. The late Sir J. Russell Reynolds says—"Much of the old-fashioned, often dreary, lecture of an hour's duration has passed away, and in its place is a demonstration—an object lesson—a conversation or an examination."

The Examination Committee work on the same lines, and have done much to help the student. The key-note on this subject was struck by Mr. Teale in his able statement to the General Medical Council in 1881-2. He says—"Examinations have become universal tyrants of education. They are and have been not only potent for good, but I fear very often for evil. It is for the medical profession to set its own house in order, and show that with all our experience and knowledge we can work out what is good for our own profession, and then come with force upon the public, and rescue those

whom we see daily being dragged under the wheels of the great Juggernaut."

The regulations for education and examination have been made for the man of ordinary abilities, and if the subjects are taken in the order recommended the course of study and examinations go hand-in-hand. There will be no hurry or flurry.

The admission of uneducated men to the medical profession has been made more difficult, and as time goes on it will be more and more difficult. A man with no education should not be permitted to enter a learned profession. The ignorant, idle, and lazy man will find very little room for him in this busy world.

There is at this stage a very important consideration, and parents and guardians should consider it carefully. The fact is that many men never were constructed for medicine—"Some men can no more learn mathematics than others can music. There is a 'pons asinorum' somewhere—not only in euclid—for almost everyone, and much trouble of school and college and after life might be entirely spared if relations and tutors would recognise the fact."—*Sir J. Russell Reynolds*.

Many men have been most successful in other ways, even though the sad discovery came to them after passing all their examinations. The earlier a man is told that he cannot be a medical man the better.

The first care of the Medical Council was to make the portals of admission to the profession as equal as possible. This was done by sending an inspector and a visitor to report on the various examinations conducted by every body conferring a degree or giving a license. The reports are noted and criticised by the governing body and the examiners, and then reported on by the Examination Committee to the General Council.

Some of these reports are very curious and amusing reading—some are very sad. In some instances the most extraordinary want of education is reported. Men who have passed an examination in general education, who have passed their term examinations, who have been permitted to pass their final examination because the examiners had not been instructed to take notice of anything outside the subjects of the examination; men whose writing and spelling is described as that of an illiterate peasant.

Having collected a great mass of information, the whole is gone through and recommendations are formulated. The various bodies have loyally adopted most of these, with the result that the actual examinations are more equal. One of the results of these investigations has been the discovery that no student could make up his

work in four years. The Medical Council suggested that a fifth year should be required, and this suggestion has been adopted by nearly all the licensing bodies. This additional year is supposed to be a year of comparative leisure from theoretical study, and is meant to be devoted to training in practical work.

Dr. Bruce says—"This practical training (technical) can, of course, be best secured under the eye of the teacher in well-organised hospitals and dispensaries; but there are not sufficient posts for all pupils in such institutions, and under proper control students may also be trained in smaller fields of labour. . . . Looking to the time, which is not distant, when all unqualified assistance is forbidden, there must still be an exception in favour of legitimate pupilage. . . . In no case should a man be permitted to go up for his final examination who could not show that he had had the charge of patients, and possessed at least the rudiments of the working of his profession.^a

"Unqualified assistant"^b is an expression not understood in Ireland; in England it is too well known. The Medical Council are becoming more alive to the dangers of this custom. The medical man employs a man who has, possibly, been a medical student for a year—often less—who makes up the books and visits certain patients in the absence of the doctor, but who cannot sign certificates. Of this kind of practice we know nothing, and to *our* students it is of no interest.^c There is, however, in England a variant of this creature, and one who should be known by every student who intends to seek work at the other side of St. George's Channel. A man holds a practice, but has no medical qualification. He advertises for a registered medical man who is to receive a certain stipend for looking after the practice, with this man. What he really has to do is to sign death certificates for patients who die under the treatment of the man whose name is not on the Register, and cannot do it himself. Doing this is considered by the Medical Council to be "Infamous in a professional respect." Then comes the punishment; but who is punished? The qualified man—the man who has toiled for years to get his name upon the Medical Register. And what is the punishment? "That the Registrar be directed to erase the name of Mr. — from the Medical Register." The unqualified man puts out another advertisement, and easily obtains another victim, and carries out his practice without any legal qualification.

^a The Med. Mag., Aug. Page 568.

^b This is in fact instituting another form of the unqualified assistant.

^c Unqualified assistance has met with no favour in Ireland.

The Medical Council have advised that some of the subjects now taken in the first year should be taught in school. Elementary chemistry and physics are now taught in many of our large schools. This is a step in the right direction. Not only will the first professional years be relieved of these subjects, but the mind of the school-boy will become familiar with the elements of science. He learns to learn.

The Medical Council has made a new departure at the other end of the professional course. The great subject of hygiene has been made a post-graduate course, and a special committee has been instituted with the medical head of the Local Government Board as chairman. The licensing bodies give a special diploma. Every medical man should know something of hygiene and public health, and it does form part of the ordinary course of study. Now public health and hygiene have outgrown former grounds, and the public at last have recognised that Hygiene and Preventive Medicine demand special teaching and special education. Appointments in future will not be given to men who do not hold this diploma. No doubt other subjects will become also post-graduate. Such a subject as Mental Diseases. It seems curious that a special and technical education should be considered necessary for a medical man to fit him to inspect a house, and yet two medical men can, by signing a certificate, deprive a man of his liberty. The law of the land provides a protection by appointing highly educated and experienced inspectors. Should not a diploma be required of these inspectors as well as of the Inspectors of the Local Government Board?

The Medical Council have advised that the student should not attend hospital in his first year of study. It is almost useless to go round the wards of an hospital before there is any knowledge of even the common terms used. Do not think from this that attending hospital is not of importance.

A man who knows nothing can neither hear nor see anything; he gets into a habit of letting what is to be heard or seen pass over him—nothing sticks. In hospital you learn to use your eyes and your memory. You cultivate your powers of observation. Keep your eyes open, and do not fear to ask if you do not know. I think it was Hunter who said, "The unpardonable sin in a student is to say 'I know,' when he does not know." Observe everything, but avoid bringing a big note-book to hospital—a little one, to note a word you do not understand, is enough. Never write down tips.

The great thing for a student to do is to master groups of symptoms and signs, and contemplate what he sees. Years after-

wards he may see a similar case, and his memory at once goes back. He has a complete picture in his mind to compare and contrast with it. He knows how to seek for signs that another has failed to find; he knows what to do, because he has seen, he has thought, he remembers. He saves himself the humiliation of having to confess—probably only to himself—that he never met a case like it before, and does not know what to do; or, quite as bad, he remembers he saw just such a case, and had full notes of it and its successful treatment, but only remembers that the notebook was lost years ago.

The true student of medicine and surgery gets his cases well into his mind, and knows how to find them when he wants them. This is one of the means of attaining the greatest of all good gifts, the gift of healing. The man who sits beside the bed of a sick child, and watches how it moves, the attitudes it takes in sleep, who thinks out why one child lies with its head drawn back and its eyebrows drawn together—why another draws its knees up to its chin—that man has learned more in half an hour than if he had read for hours.

Many think that they have done the “whole duty of man” when they have their names on the Medical Register. It is then that you truly begin your real education. All your previous studies are only your weapons for the great struggle of life. See that you have them at hand, use them well, and keep them bright.

There is one more subject I would urge upon the student, and that is nursing. Many a first-rate surgeon or medical man has lost his case, though he had done all that “skill and art could do,” by having an ignorant and stupid nurse. I do not think a medical man should ever practise nursing, but he should know all about it; he should know what good nursing means—be able at once to recognise the absence of it. You will have ample opportunity of learning what good nursing means from our Sister Ellinor and her most efficient staff.

In conclusion, I would urge you to work your hospital—become familiar with the ways and customs of the sick and suffering, cultivate a gentle hand and a sympathetic manner—a kind word will often do more than treatment. Never forget that the mission of our glorious profession is not only to cure the curable, but to comfort and relieve the incurable.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—JAMES LITTLE, M.D., F.R.C.P.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF SURGERY.

President—SIR WILLIAM THOMSON, President of the Royal College of Surgeons.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, May 14, 1897.

The PRESIDENT in the Chair.

Apparatus for Air Distension of Bladder in Supra-pubic Cystotomy.

MR. JOHN LENTAIGNE exhibited an apparatus for distending the bladder with air in the operation of supra-pubic cystotomy. The apparatus consisted of an Indiarubber air pump with reservoir of the same material, similar to what was used with the ordinary hand spray; this was attached by means of a rubber tube to a silver catheter, which was introduced into the bladder. In using the apparatus the reservoir was first distended with air, which was then allowed to gradually distend the bladder, and the operation was then performed. If it became necessary to force the bladder forward in the wound pressure was made on the reservoir outside. The reservoir indicated the amount of tension in the bladder, which could thus easily and safely be increased when required. Mr. Lentaigne had used this apparatus in a case quite recently, and had found it of great service in many ways. He had closed the bladder wound with catgut sutures, and the entire wound had healed by first intention.

Pyloroplasty.

MR. JOHN LENTAIGNE exhibited a patient on whom he had performed the operation of pyloroplasty on Feb. 26, 1897, for fibrous stricture of pylorus with great dilatation of stomach. The patient, who had been brought to him by Dr. M. A. Boyd, was then in an extremely weak and emaciated condition. He had been suffering for nine years, and it was evident he could not have lasted much

longer without relief. Owing to the presence of numerous and firm adhesions the operation had proved very tedious and troublesome, lasting nearly two hours, but the result had proved in every way most satisfactory. The healing of the wound had been uneventful, and the patient, who was now apparently in perfect health, had gained over two stone in weight.

Mr. Lentaigne detailed some statistics in connection with the operation, and contrasted it with other procedures applicable to the relief of stricture of the pylorus and dilatation of the stomach. The result in this very trying case could not have been better under any circumstances with any other method.

The PRESIDENT said he was sure that the Academy would feel greatly indebted to Mr. Lentaigne for his most interesting case. It had the great merit of having been successful, and the operation seemed to him to be an improvement upon Loreta's method. The comparative success of the proceeding was a very strong recommendation that they should do that operation in suitable cases, rather than simply dilating the strictured pylorus, and the method was much safer. He referred to a suggestion made by Mr. Robson to introduce a button with the object of lessening the time in suturing.

PROFESSOR BENNETT congratulated Mr. Lentaigne on the success of his proceeding. His own experience in the matter was very limited, but he took it, he said, that the operation was one that was proposed for stricture of pylorus which was not malignant.

SIR WILLIAM STOKES said that it was very encouraging to hear the statistics in connection with Mr. Lentaigne's operation.

MR. NIXON said that he had seen the patient shortly after the operation, and in looking at him now he had no hesitation in saying that the man was brought from death to life. He thought that Mr. Lentaigne was to be heartily congratulated on his success, and also Dr. Boyd upon his diagnosis.

MR. MYLES said that the real question underlying the paper was whether the operation of pyloroplasty was the best method of treating stricture of the pylorus. If the operation of pyloroplasty took two hours in the hands of a skilful operator, he thought that it compared very unfavourably with the operation of gastro-duodenostomy which could be done in about twenty-five minutes. The results of the latter operation were also very favourable. Another objection was that until a microscopic section had been made, one could not be sure that the stricture was fibrous.

MR. E. H. TAYLOR said that he did not agree with Mr. Myles in placing the operation of gastro-duodenostomy in cases of this

kind before the operation of pyloroplasty. If the case was one of malignant stricture, he thought the ideal operation was gastro-duodenostomy. Recent French statistics showed that the operation was very successful, and it was an operation which, in his opinion, ought to be advocated.

MR. LENTAIGNE, in reply, thanked those present for the way in which they had received his paper. With regard to Professor Bennett and Mr. Taylor's remarks, he said that the operation was suitable only for non-malignant stricture of the pylorus. The success of the operation in such a large number of the cases reported, seemed to him to justify a place for it in surgery. With regard to Mr. Myles's remarks, he (Mr. Lentaigne) said that his operation had been a very exceptional one as regards the time taken in performing it, but this was on account of the peculiar condition of parts. Many other reported cases of pyloroplasty had been quite easy, and the time taken very short. He considered that a surgeon could almost always be able to decide with accuracy whether a patient was suffering from simple or malignant stricture, when he considered the conditions of the parts seen in the operation along with the clinical history.

Fracture of the Metacarpal Bone of the Thumb.

DR. E. H. BENNETT placed on record the following facts in relation to the fracture of the base of the metacarpal bone of the thumb in addition to those which he published in 1881 and in 1886. Continued observation has fully established this injury as the commonest metacarpal fracture. The specimens now placed in the museum of the School of Physic, Trinity College, were now all alike in pattern, nine being bones of the right side, one a left bone, the latter the first specimen he had seen. With the X rays the photographs established the details of the recent injury, and confirm the view he had published as to the path of the fracture passing obliquely through base without implication of the dorsal surface of the bone. He exhibited photographs taken by Dr. W. S. Haughton from two patients observed this session in Sir P. Dun's Hospital, one a three-days old fracture, the second three weeks after the occurrence of the injury. Lastly, he exhibited casts of the hands, and X-ray photographs of them, from a man who had sustained the injuries in both hands simultaneously by a fall from a ladder, the deformities in both hands being characteristic of the fracture as seen in the plaster casts and in photographed outlines of the bones.

THE PRESIDENT said that the communication was a very impor-

tant one. The photographs exhibited by Mr. Haughton showed the condition of the fracture in the living, which, as pathological conditions after death, it had been so difficult to find.

MR. SWAN said that the paper was of particular interest to him, inasmuch as he himself had sustained a fracture similar to that described by Mr. Bennett. He had received the injury by striking an object, and he subsequently found that he was unable to grasp a glass, because the metacarpal bone of his right thumb slid away from what he conceived to be the carpal or near extremity of the fracture, or, in other words, that the shaft of the bone was dislocated from the small portion which remained in position with the trapezium. There was a great deal of swelling in the hand, and the pain was intolerable. Many surgeons had considered the injury to be a dislocation; but it was not until reading Professor Bennett's communication in the *Dublin Quarterly Journal* of 1881 that he understood the nature of the injury.

MR. LENTAIGNE spoke.

SIR WILLIAM STOKES said that they owed the description of the injury to Professor Bennett, and it was a matter of great satisfaction to him to know that he (Professor Bennett) had received very full recognition by eminent writers, not only at home, but in France and Germany, for having given the best description of the injury. He had merely to express the wish that the injury might, in the future, be associated with the name of Professor Bennett.

Remarks were also made by Dr. KNOTT.

DR. E. H. BENNETT replied.

The Section then adjourned.

SECTION OF OBSTETRICS.

President—LOMBE ATTHILL, M.D.

Sectional Secretary—F. W. KIDD, M.D.

Friday, May 28, 1897.

The PRESIDENT in the Chair.

Specimens.

DR. JELLETT exhibited two cirrhused ovaries removed by vaginal colpotomy.

DR. A. SMITH asked if the incision adopted by Dr. Jellett did not render the operation more difficult than an abdominal incision would have done. He thought that the fact of having no bladder to deal with was due to the size of the uterus.

DR. KIDD asked if it was a usual and well-recognised thing that the so-called condition of cirrhosis is followed by the symptoms described, and such as always resist any other treatment, so as to make it an absolute necessity to remove the ovaries.

DR. PUREFOY gave a case similar to Dr. Jellett's. There had been for years well-marked ovarian dysmenorrhœa, and the patient suffered great pain. He had hoped that the symptoms would disappear with advancing years, but at forty-two the patient still suffered and the ovaries were removed. Recovery complete. He thought that the disappearance of the pains in such cases was not to be expected with advancing years.

DR. JELLETT, in reply, said that where it was possible to remove the ovaries by the vagina in a woman who is not going to become pregnant, he thought that by such a procedure there was very great absence of shock and less risk of sepsis, but the latter fact he could not explain. The extremely small size of the vagina and the shortness of the ovarian ligaments made the difficulty. He believed the pain to have been caused by pressure of the fibrous tissue on the nerves in the ovary.

Dermoid Cysts of the Ovary.

DR. ALFRED SMITH showed three large dermoid cysts of the ovary which he removed from patients aged twenty-one, thirty-eight, and twenty-four respectively. The tumours although large, extending in each case above the level of the umbilicus, caused little inconvenience and were quite free from pain. They were fine examples of this class of tumour, and were well supplied with teeth, bone-plates, and large wisps of hair. The patients made good recoveries.

Double Dermoid.

DR. KIDD exhibited a double dermoid which he had removed from a patient, aged thirty-three, kindly sent to him by Dr Kearney, of Dundalk. Patient had had amenorrhœa for 14 months previous to operation. The larger tumour—as large as a foetal head—contained the ordinary fatty substance, which was fluid at the temperature of the body, but solidified on cooling; it also contained hair, one tooth, a spicule of bone about half an inch long, and two growths on the inside wall of sac, which, when examined microscopically, presented all the appearance of ordinary mammary gland tissue. The smaller tumour was about the size of a goose-egg. It seemed to have a short pedicle, but the larger tumour did not seem to have any. It was universally adherent, especially to

omentum. Some of the contents escaped into the peritoneal cavity, but it was well washed out with sterilised normal saline solution. After operation temperature rose to 100.8° , but fell again next morning, and never again touched 99° . She made an uninterrupted excellent recovery.

Myoma Uteri removed by Panhysterectomy.

DR. PUREFOY exhibited (a) myoma uteri removed by panhysterectomy; (b) ditto.

DR. A. SMITH asked Dr. Purefoy if he thought it would be well to leave the ovaries behind in such cases.

DR. PUREFOY, in reply, said that in his opinion it was better to remove the ovaries where the uterus was removed.

Notes of a Case of Hæmorrhage into the Broad Ligament arising from the Stump of an Ovarian Cyst, and Complicating the Puerperium.

DR. J. H. GLENN being absent, the SECRETARY read the following:—Some rather unusual features in the following case will, I hope, be of interest, and must be my apology for bringing it before the Academy. In January, 1894, through the kindness of Dr. Smyly, then Master of the Rotunda Hospital, I removed a left ovarian cyst from a young married woman, A. H., whose age was stated to be twenty-seven. The operation was simple, and the only feature of interest was an excessively varicose condition of the pedicle. This gave rise to a little more hæmorrhage than is usual, but was carefully ligatured, and the patient went on uninterruptedly.

On January 27, 1895, I delivered her of a living female child by forceps. On September 19, 1896, I was called again, but the baby was already born on my arrival; this time it was a boy, which is interesting as she had only the right ovary. The uterus was firmly contracted and no trouble was experienced with the placenta, as it came away easily, neither was there any oozing. On palpation there was nothing now to be detected, but I did not feel satisfied, as her pulse was 110 and her aspect anxious. About 15 minutes after the expulsion of the placenta I felt a swelling on the left, corresponding to the height of the firmly contracted uterus, and strangely simulating a uterus bicornis. Mrs. H. now was exceedingly restless and complaining of lack of air, while the hæmatoma was undoubtedly increasing, so I sent for Dr. Smyly, to whom I am greatly indebted for his prompt aid. The swelling was now almost as high as the lower border of the ribs in the mammary line but little over the middle abdominal line. On examination,

and taking into consideration the way the patient was holding her own, we thought we were acting wisely in awaiting developments, and so the event proved, as she never looked back, her highest temperature being 99.4°.

I believe that here we had a rupture of one of the varicose veins mentioned above as seen in the pedicle, and predisposed to this by the softening of pregnancy and the strain of parturition. The other possible condition is an incomplete rupture of the uterus; against this I think may be placed no pelvic deformity, no prolonged labour, no lacerated cervix, and the pulse, though rapid, did not display the intermittent character, nor the patient the very profound shock usually associated with this condition. I had an opportunity of examining this patient five months after confinement, and the hæmatoma had dwindled to the size of a foetal head and was distinctly fluctuating. I may mention in this connection a case reported by Tergrigorianz, in which a broad ligament hæmatoma through pressure-necrosis communicated with the posterior vault, and was emptied of offensive bloody fluid after four months. The future history of my case may possibly, therefore, be of interest.

DR. WINIFRED DICKSON said that it seemed difficult to her to imagine how the broad ligament could have become distended so suddenly to allow the tumour to reach up to the ribs. On the other hand, the blood must have been confined, or fatal hæmorrhage would have occurred.

DR. PUREFOY said that such a case was uncommon. The case recalled to his mind another case in which a woman was operated on for an ovarian tumour. About a week afterwards, when the patient was doing well, she unfortunately ate some delicacies brought her by her daughter. Violent vomiting and gastric disturbance followed, and a hæmatocele was produced, owing to the rupture of a vein. Convalescence was delayed, but complete recovery ensued.

Double Ovariectomy with eighteen months' interval between the Operations.

DR. E. WINIFRED DICKSON read a paper on double ovariectomy with eighteen months' interval between the operations. Mrs. M. K., aged forty, was admitted to the Richmond Hospital in May, 1895, suffering from ascites and an abdominal tumour. Laparotomy was performed and an ovarian papillary cystoma removed from the left side. Patient made an aseptic recovery. Eighteen months later she presented herself in a very similar condition with ascites and a right-sided tumour. Respiration was very much impeded

by the distension of the abdomen, but the laparotomy scar had not yielded. Abdomen opened for the second time in November, 1896; similar tumour removed from right side and about six quarts of ascitic fluid. Patient rallied well after the operation, but died about six weeks later with all the clinical appearance of malignant disease, but the *post-mortem* showed that it was an unusual form of recurrence.

MR. O'SULLIVAN said that he examined both tumours after their removal and found them to be of the same character, and to be papillary cystic tumours, which appeared to him to be of a benign character. At the *post-mortem* he found an extensive fibrinous peritonitis. Nodules, some solid and some cystic, were found in the peritoneum covering the intestines and in the thickened capsule of the liver. Under the microscope they showed the characters of the original growths. No secondary growths were found except in the peritoneum. He regarded it as a case of peritoneal infection by dissemination of the tumour cells through the abdominal cavity.

DR. A. SMITH said that he had recently operated on a case presenting a similar clinical history to that of Dr. Dickson's. In that case Professor McWeeney had made the diagnosis of malignant adenoma. The tumour did not return. The point of interest in such cases was the question of the escape of fluid originally into the peritoneal cavity. It is said that in cases of papillomata the escape of fluid contents into the peritoneal cavity is often followed by the grafting of small cells into the peritoneum, these cells subsequently showing a malignant tendency. In Dr. Dickson's case, he thought that she had acted properly in not removing the second ovary at the first operation. The recurrence of the disease in the opposite ovary was rare.

DR. PUREFOY mentioned a case in which a non-malignant ovarian tumour had been removed, followed by normal convalescence for about three weeks, when malignant disease rapidly showed itself in the pelvis, and death occurred. He believed that in Dr. Dickson's case the escape of some fluid into the peritoneal cavity, and the fact of the second ovary showing the same disease as the first, was a mere coincidence. He considered that when the ovary presented an appearance at all healthy it was the proper treatment to leave it.

DR. DICKSON and MR. O'SULLIVAN replied.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four weeks ending Saturday, October 9, 1897.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Sept. 18	Sept. 25	Oct. 2	Oct. 9		Sept. 18	Sept. 25	Oct. 2	Oct. 9
Armagh -	49·1	35·1	28·0	21·0	Lisburn -	17·0	17·0	21·3	25·7
Ballymena	11·3	39·5	5·6	11·3	Londonderry	9·4	25·1	23·6	17·3
Belfast -	23·7	22·8	24·1	20·6	Lurgan -	27·4	18·2	18·2	18·2
Carrickfergus	5·8	17·5	17·5	11·7	Newry -	12·1	8·1	12·1	24·1
Clonmel -	14·6	9·8	19·5	19·5	Newtownards	11·3	11·3	22·7	17·0
Cork -	19·4	18·0	20·8	21·5	Portadown	30·9	30·9	24·7	0·0
Drogheda -	0·0	26·6	19·0	11·4	Queenstown	17·2	28·7	11·5	34·4
Dublin -	23·6	27·6	26·0	21·3	Sligo -	15·2	15·2	40·6	45·7
Dundalk -	29·3	8·4	16·8	25·1	Tralee -	16·8	28·0	106·3	11·2
Galway -	18·9	18·9	11·3	41·5	Waterford	29·8	8·0	13·9	11·9
Kilkenny -	23·6	9·4	33·0	14·2	Wexford -	22·6	22·6	13·5	13·5
Limerick -	25·3	12·6	19·6	16·8					

In the week ending Saturday, September 18, 1897, the mortality in thirty-three large English towns, including London (in which the rate was 16·1), was equal to an average annual death-rate of 18·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·4 per 1,000. In Glasgow the rate was 19·6. In Edinburgh it was 19·2.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of Ireland was 22·1 per 1,000 of their aggregate population, which, for the purposes of this return, is estimated at 984,720.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 3·7 per 1,000, the rates varying from 0·0 in thirteen of the districts to 18·6 in Portadown—the 5 deaths from all causes registered in that district comprising 1 from enteric fever and 2 from diarrhoea. Among the 128 deaths from all causes registered in Belfast are 2 from whooping-cough, 1 from diphtheria, 8 from enteric fever, and 14 from diarrhoea. The 28 deaths in Cork comprise 1 from diphtheria, 2 from enteric fever, and 1 from diarrhoea. The 3 deaths in Newry consist of 2 from measles and 1 from diarrhoea. Two of the 6 deaths in Lurgan were caused by diarrhoea. The 3 deaths in Queenstown comprise 1 from whooping-cough and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 205—116 boys and 89 girls; and the registered deaths to 160—82 males and 78 females.

The deaths, which are equal to the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·9 in every 1,000 of the population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 23·6 per 1,000. During the first thirty-seven weeks of the current year the death-rate averaged 30·7, and was 3·6 over the mean rate in the corresponding period of the ten years 1887–1896.

Thirty-two deaths from zymotic diseases were registered, being equal to the number registered in the preceding week, and 2 over the average for the thirty-seventh week of the last ten years. The 32 deaths for last week comprise 1 from scarlet fever (scarlatina), 5 from whooping-cough, 3 from diphtheria, 1 from ill-defined fever, 5 from enteric fever, 1 (in the Richmond District Lunatic Asylum) from beri-beri, 1 from choleraic diarrhoea, 12 from diarrhoea (being 4 under the average number from that cause in the corresponding week of the last ten years), and 1 from dysentery. Ten of the 12 deaths from diarrhoea were of children under 5 years of age.

The number of cases of scarlatina admitted to hospital was 23, being 2 under the admissions in the preceding week, but 4 over the number for the week ended September 4. Twenty-one scarlatina patients were discharged, and 108 remained under treatment on

Saturday, being 2 over the number in hospital at the close of the preceding week. This number does not include 24 patients at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Twenty-eight cases of enteric fever were admitted to hospital, against 20 in the preceding week, and 14 in the week ended September 4. Ten patients were discharged, 7 died, and 72 remained under treatment on Saturday, being 11 over the number in hospital on that day week.

The hospital admissions included, also, 4 cases of measles. There were but 7 cases of this disease in hospital on Saturday, 12 patients having been discharged in the course of the week.

Diseases of the respiratory system caused 22 deaths, being 5 in excess of the average for the corresponding week of the last ten years, and 2 over the number for the previous week. The 22 deaths comprise 13 from bronchitis, 5 from pneumonia, and 2 from croup.

In the week ending Saturday, September 25, the mortality in thirty-three large English towns, including London (in which the rate was 15·7), was equal to an average annual death-rate of 17·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·8 per 1,000. In Glasgow the rate was 18·5, and in Edinburgh it was 18·7.

The average annual death-rate in the twenty-three principal town districts of Ireland was 22·8 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 4·3 per 1,000, the rates varying from 0·0 in eleven of the districts to 14·0 in Armagh—the 5 deaths from all causes registered in that district comprising 1 from whooping-cough and 1 from enteric fever. Among the 123 deaths from all causes registered in Belfast are 1 from measles, 3 from whooping-cough, 3 from simple continued fever, 8 from enteric fever, and 10 from diarrhœa. The 16 deaths in Londonderry comprise 1 from whooping-cough and 5 from diarrhœa. Of the 7 deaths in Drogheda, 2 were from whooping-cough, and the 5 deaths in Queenstown comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 179—84 boys and 95 girls; and the registered deaths to 190—95 males and 95 females.

The deaths, which are 33 over the average number for the corresponding week of the last ten years, represent an annual rate

of mortality of 28·3 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 27·6 per 1,000. During the first thirty-eight weeks of the current year the death-rate averaged 30·6, and was 3·6 over the mean rate in the corresponding period of the ten years 1887–1896.

The deaths from zymotic diseases registered amounted to 44, being 13 in excess of the average for the corresponding week of the last ten years, and 12 over the number for the previous week. They comprise 4 from scarlet fever (*scarlatina*), 1 from influenza 4 from whooping-cough, 1 from diphtheria, 9 from enteric fever, 21 from diarrhoea (being 6 over the average for the corresponding week of the last ten years), and 1 from erysipelas. Seventeen of the 21 deaths from diarrhoea were of children under 5 years of age.

Twenty-eight cases of *scarlatina* were admitted to hospital, being 5 over the admissions in the preceding week, and 3 over the number in the week ended September 11. Fifteen *scarlatina* patients were discharged, 2 died, and 119 remained under treatment on Saturday, being 11 over the number in hospital at the close of the preceding week. This number does not include 24 convalescents at Beneavin, Glasnevin.

The weekly number of cases of enteric fever admitted to hospital, which had risen from 20 in the week ended September 11 to 28 in the following week, fell to 24. Six patients were discharged, 2 died, and 88 remained under treatment on Saturday, being 16 over the number in hospital on that day week.

No cases of measles were admitted to hospital, and there were but 5 cases of the disease in hospital on Saturday, being 2 under the number at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 21, being 4 over the average for the corresponding week of the last ten years, but 1 under the number for the previous week. The 21 deaths comprise 10 from bronchitis and 8 from pneumonia.

In the week ending Saturday, October 2, the mortality in thirty-three large English towns, including London (in which the rate was 15·3), was equal to an average annual death-rate of 16·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·4 per 1,000. In Glasgow the rate was 18·5, and in Edinburgh it was 19·2.

The average annual death-rate represented by the deaths regis-

tered in the twenty-three principal town districts of Ireland was 24·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 3·0 per 1,000, the rates varying from 0·0 in fourteen of the districts to 11·5 in Queenstown—the 2 deaths from all causes registered in that district consisting of 1 from whooping-cough and 1 from diarrhœa. Among the 130 deaths from all causes registered in Belfast are 1 from whooping-cough, 2 from diphtheria, 13 from enteric fever, and 4 from diarrhœa. The 30 deaths in Cork comprise 2 from whooping-cough, 1 from enteric fever, and 1 from diarrhœa. Among the 15 deaths in Londonderry are 1 from whooping-cough and 4 from diarrhœa. The 7 deaths in Waterford comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 239—135 boys and 104 girls; and the registered deaths to 178—90 males and 88 females.

The deaths, which are 16 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·5 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 26·0 per 1,000. During the first thirty-nine weeks of the current year the death-rate averaged 30·5, and was 3·5 over the mean rate in the corresponding period of the ten years 1887–1896.

Deaths from zymotic diseases fell to 23, or 5 under the average for the corresponding week of the last ten years. The 23 deaths comprise 2 from scarlet fever (scarlatina), 1 from whooping-cough, 3 from diphtheria, 6 from enteric fever, 1 from simple cholera, and 8 from diarrhœa (being 7 under the average number from that cause in the corresponding week of the last ten years).

The number of cases of scarlatina admitted to hospital was 21, being 7 under the admissions in the preceding week. Nineteen scarlatina patients were discharged, 2 died, and 119 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week. This number does not include 22 convalescents at Beneavin.

Thirty-eight cases of enteric fever were admitted to hospital, against 24 in the preceding week. Twelve patients were discharged, 1 died, and 113 remained under treatment on Saturday, being 25 over the number in hospital on that day week.

The hospital admissions included, also, 2 cases of measles: 6 cases of the disease remained under treatment in hospital on Saturday.

Twenty-nine deaths from diseases of the respiratory system were registered, being 12 in excess of the average for the corresponding week of the last ten years, and 8 over the number for the previous week. They comprise 17 from bronchitis and 10 from pneumonia.

In the week ending Saturday, October 9, the mortality in thirty-three large English towns, including London (in which the rate was 15·5), was equal to an average annual death-rate of 16·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·8 per 1,000. In Glasgow the rate was 20·9, and in Edinburgh it was 16·9.

The average annual death-rate in the twenty-three principal town districts of Ireland was 20·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in twelve of the districts to 12·1 in Newry—the 6 deaths from all causes registered in that district comprising 3 from diarrhœa. Among the 111 deaths from all causes registered in Belfast are 1 from scarlatina, 1 from whooping-cough, 2 from diphtheria, 8 from simple continued and ill-defined fever, and 6 from enteric fever. The 31 deaths in Cork comprise 1 from whooping-cough and 3 from diarrhœa. Two of the 3 deaths in Drogheda were from whooping-cough. The 3 deaths in Kilkenny comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 161—80 boys and 81 girls; and the registered deaths to 147—77 males and 70 females.

The deaths, which are 4 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·9 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 21·3 per 1,000. During the first forty weeks of the current year the death-rate averaged 30·3, and was 3·4 over the mean rate in the corresponding period of the ten years 1887–1896.

The number of deaths from zymotic diseases registered was 21, being 5 below the average for the corresponding week of the last ten years, and 2 under the number for the previous week. The 21 deaths comprise 3 from scarlet fever (scarlatina), 2 from influenza and its complications, 4 from enteric fever, 1 from choleraic diarrhœa, 8 from diarrhœa, and 2 from dysentery.

Twenty-two cases of scarlatina were admitted to hospital, being 1 in excess of the admissions in the preceding week. Twenty-five

scarlatina patients were discharged, 1 died, and 115 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week. This number is exclusive of 25 convalescents at Beneavin, Glasnevin.

The number of cases of enteric fever admitted to hospital fell to 24. Eighteen patients were discharged and 119 remained under treatment on Saturday, being 6 over the number in hospital at the close of the preceding week.

Twenty-two deaths from diseases of the respiratory system were registered, being 1 over the average for the corresponding week of the last ten years, but 7 under the number for the previous week. They comprise 14 from bronchitis and 7 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of September, 1897.

Mean Height of Barometer, -	-	-	29.990 inches.
Maximal Height of Barometer (on 13th, 9 a.m.),			30.578 „
Minimal Height of Barometer (on 1st, at 6.45			
p.m.), -	-	-	29.177 „
Mean Dry-bulb Temperature, -	-	-	53.0°.
Mean Wet-bulb Temperature, -	-	-	50.8°.
Mean Dew-point Temperature, -	-	-	48.5°.
Mean Elastic Force (Tension) of Aqueous Vapour, .343 inch.			
Mean Humidity, -	-	-	85.2 per cent.
Highest Temperature in Shade (on 23rd), -			67.7°.
Lowest Temperature in Shade (on 18th), -			40.9°.
Lowest Temperature on Grass (Radiation) (on			
11th), -	-	-	36.8°.
Mean Amount of Cloud, -	-	-	51.7 per cent.
Rainfall (on 16 days), -	-	-	2.583 inches.
Greatest Daily Rainfall (on 1st), -	-	-	1.166 inches.
General Directions of Wind, -	-	-	N.W., W., S.W.

Remarks.

This month began badly, but proved favourable after the first few days, which were cold and wet. A rainstorm of great violence occurred in the east and south-east of Ireland on the 1st, when 2.700 inches of rain were measured at Greystones, and 1.166 inches in Dublin. An anticyclone formed on the 8th, bringing a week of beautiful weather. On the 29th a severe thunderstorm, accom-

panied by torrents of rain, passed over the south and south-east of England. The night temperatures were particularly low from time to time.

In Dublin the arithmetical mean temperature (54.5°) was below the average (55.8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 53.0° . In the thirty-two years ending with 1896, September was coldest in 1886 and in 1882 (M. T. = 53.0°), and warmest in 1865 (M. T. = 61.4°). The three warmest Septembers experienced in Dublin of late years have been—1865 (M. T. = 61.4°), 1890 (M. T. = 59.6°), and 1895 (M. T. = 59.1°).

The mean height of the barometer was 29.990 inches, or 0.080 inch above the corrected average value for September—namely, 29.910 inches. The mercury rose to 30.578 inches at 9 a.m. of the 13th, and fell to 29.177 inches at 6 45 p.m. of the 1st. The observed range of atmospheric pressure was, therefore, 1.401 inches.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 53.0° , or 6.2° below the value for August, 1897. Using the formula, *Mean Temp.* = *Min.* + (*max.* - *min.* $\times .476$), the mean temperature was 54.2° , or 1.3° below the average mean temperature for September, calculated in the same way, in the twenty-five years, 1865-89, inclusive (55.5°). The arithmetical mean of the maximal and minimal readings was 54.5° , compared with a twenty-five years' average of 55.8° . On the 23rd the thermometer in the screen rose to 67.7° —wind, W.S.W.; on the 18th the temperature fell to 40.9° —wind, N.W. The minimum on the grass was 36.8° on the 11th.

The rainfall was 2.583 inches, distributed over 16 days. The average rainfall for September in the twenty-five years, 1865-89, inclusive, was 2.176 inches, and the average number of rainy days was 14.7. In 1871 the rainfall was very large—4.048 inches on, however, only 13 days. In 1896, no less than 5.073 inches fell on 23 days, establishing a record rainfall for September. On the other hand, in 1865, only .056 inch was measured on but 3 days. In 1894, only .442 inch fell on 8 days; and in 1895, only .543 inch on 7 days.

High winds were noted on 11 days, but attained the force of a gale on only one occasion in Dublin—the 23rd. The atmosphere was foggy on the 9th, 10th, 11th, 13th, 27th, and 30th. Hail fell on the 3rd, 17th, and 18th. A solar halo was seen on the 7th.

The bad weather, which had prevailed since the second week in August, continued throughout the period ending Saturday, the 4th, which may be described as stormy, wet, and finally extremely cold for the time of year. Wednesday, the 1st, broke cloudy and

threatening, and the barometer fell fast as a new cyclonic system advanced quickly to St. George's Channel from the southwestward. In Dublin a violent rainstorm began at noon, lasting until 6 p.m. In these six hours nearly an inch of rain (.980 inch) fell, and the wind backed to S.E., E., N.E., and finally N., blowing freshly throughout. By 6.45 p.m. the barometer had fallen to 29.177 inches. Rain again set in at night, so that by 9 a.m. of Thursday, the 2nd, the measurement for the previous twenty-four hours was as much as 1.166 inches, or more than half the average rainfall for September—namely, 2.176 inches. The cyclone subsequently crossed Wales and England, travelling N.E., so that its centre reached Norway on Friday morning. In its rear a remarkable fall of temperature occurred, the thermometer falling to 38° at Stornoway, 39° at Wick, 40° at Parsonstown, and 41° in Dublin early on Friday morning, and on Friday night to between 34° and 36° over Scotland. Heavy hail showers fell on this day, but conditions moderated on Saturday. In Dublin the height of the barometer ranged from 29.177 inches at 6.45 p.m. of Wednesday (wind, N.) to 30.054 inches at 9 p.m. of Saturday (wind, W.N.W.). On Wednesday the screened thermometers rose to 61.4°, on Friday they fell to 41.0°. The rainfall was 1.582 inches on four days, 1.166 inches being recorded on Wednesday. The prevalent wind was N.N.W.

The week ended Saturday, the 11th, happily witnessed a marked change for the better in the weather, which after Wednesday continued fine, sunny and dry to the close of the period. This most fortunate and pleasant change was brought about by the development of an area of high atmospheric pressure (anticyclone) in the extreme N.W.—the very region where the barometer had previously ruled lowest for weeks together. The increase of pressure began on Wednesday and continued until Saturday, when the barometer stood well above 30.4 inches over the greater part of the British Isles. On Sunday the centre of a large depression lay near Hernösand in Sweden, while another area of low pressure was found off the N. of Ireland and W. of Scotland. The latter system caused wet weather in nearly all districts. The primary disturbance and its secondaries then began to pass southeastwards, while the anticyclone above-mentioned spread in from the N.W. over the United Kingdom. On Wednesday morning a shallow depression over the S.W. of Ireland brought rainy weather to Ireland south of Dundalk, Wales, and the entire of the S. of England. In Scotland and the N. and N.E. of Ireland the weather was brilliantly fine. As this depression passed southeastwards to France, easterly

winds, cloudless skies, and delightful weather became general in the United Kingdom, while heavy rains fell on the Continent. The nights were now very sharp—the thermometer falling in the screen to 34° at Parsonstown on Thursday night. In Dublin the mean pressure was 30·075 inches, the range being from 29·738 inches at 9 a.m. of Sunday (wind, W.) to 30·443 inches at 9 p.m. of Saturday (wind, calm). The corrected mean temperature was $53\cdot2^{\circ}$. The mean dry bulb reading at 9 a.m. and 9 p.m. was $52\cdot0^{\circ}$. On Monday the screened thermometers rose to $62\cdot8^{\circ}$, on Friday they fell to $41\cdot1^{\circ}$. Rain fell on the first four days to the amount of ·370 inch, ·188 inch being measured on Sunday. Westerly winds at first, followed by easterly on Wednesday.

Taken as a whole, the weather of the week ended Saturday, the 18th, was distinctly favourable. At first anticyclonic and genial in point of temperature, it finally became changeable, showery, and cold. But the rains were not torrential, like those of August and the first week of September, and so no further damage was done to the harvest. The barometer stood very high over the British Islands until Wednesday, when the anticyclone, which had brought such fine weather in the middle of the previous week, moved away to the southwestward. On Sunday atmospheric pressure was relatively low both off the N.W. of Norway (29·69 inches at Bodö) and in the Mediterranean Basin. A broad band of high pressure stretched from the South of Ireland (30·51 inches at Roche's Point) to the Baltic. Light variable winds and sunny weather prevailed. The anticyclone reached its fullest development on Monday, when the reading 30·58 inches was reported from several stations, including Dublin. Pressure now gave way—at first slowly and then quickly, so that on Thursday evening signs of a large depression were found between Scotland and Norway. This disturbance afterwards travelled southeastwards and spread southwards over the whole Kingdom, so that cold N.W. winds and showers of chilly rain and hail became general, thunder and lightning occurring in some places. On Saturday the wind drew into N. in Ireland and the weather became almost winterly. In Dublin the mean height of the barometer was 30·217 inches, pressure ranging between 30·578 inches at 9 a.m. of Monday (wind, S.S.E.), and 29·653 inches at 6 p.m. of Friday (wind, N.W.). The corrected mean temperature was $55\cdot3^{\circ}$. The mean dry bulb reading at 9 a.m. and 9 p.m. was $53\cdot8^{\circ}$. On Tuesday the screened thermometers rose to $66\cdot8^{\circ}$, on Saturday they fell to $40\cdot9^{\circ}$. Rain fell on the last three days to the amount of ·240 inch, ·150 inch being

measured on Friday. Hail showers occurred on Friday and Saturday. N.W. winds prevailed.

Although changeable, the weather during the week ended Saturday, the 25th, was on the whole not unfavourable. At first atmospheric depressions were found to the eastward of the North Sea, while the barometer was relatively high off the W. and S.W. of Ireland. Hence cold, northerly and north-westerly winds prevailed, and were accompanied by showers at times, especially in Great Britain. Such showers fell in Dublin on Monday night. By Tuesday morning the barometer fell nearly to 29 inches near Christiania (to 29·02 inches at Færder, on the Christiania Fjord). On Wednesday a new and brisk decrease of pressure took place in Ireland and Scotland, as another series of depressions approached our N.W. coasts. Under their influence the wind backed to W. and finally to S.W., while temperature rose fast. On Thursday forenoon the wind rose to gale force, but brilliant and hot sunshine was enjoyed in Dublin. Towards evening clouds overspread the sky, and there were showers of drizzling rain. During the ensuing night rain fell more heavily, and Friday was at first dull, rainy, and squally. In the afternoon of this day, however, it became fine, dry, and cold, and Saturday proved brilliantly fine with a fresh S.W. wind. In Dublin the mean height of the barometer was 29·839 inches, pressure ranging between 29·508 inches at 3 45 p.m. of Thursday (wind, W.S.W.) and 30·057 inches at 9 a.m. of Saturday (wind, S.W.). The corrected mean temperature was 54·0°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 53·5°. On Sunday the screened thermometers fell to 41·8°, on Thursday they rose to 67·7°. The rainfall was ·237 inch on three days, ·142 inch being measured on Thursday. The prevalent winds were—at first N.W., afterwards S.W. The force of the wind was considerable.

The most striking feature of the weather during the closing period of the month—26th to 30th, inclusive—was a violent thunderstorm which passed over the south and south-east of England on Wednesday evening. It was accompanied by very heavy rains and caused loss of life. The rainfall during the storm was 1·03 inches at Brixton, London; 1·13 inches at Oxford; and 1·45 inches at Cambridge. The disturbance was unfelt in Ireland, but extended to France on Thursday. Sunday was very fine after a slight shower in the forenoon. As the day advanced an anticyclone spread westward from the Continent, causing a brisk rise of the barometer and still finer weather. On Monday morning a wet vapour fog lay over Ireland, but this soon dispersed. During the next two days the barometer fell steadily, and a complex depression formed over

the British Islands, leading to the electrical storm of Wednesday night. On Wednesday forenoon a lofty sheet of cirriform cloud was seen from Dublin clearing off from S.S.W. At night the wind shifted in Ireland to N., and an exceptionally heavy electrical shower fell at 8 15 a.m. of Thursday. The weather then remained fine. In Dublin the height of the barometer ranged from 30·200 inches at 9 a.m. of Monday (wind, S.W.) to 29·684 inches at 9 p.m. of Wednesday (wind also S.W.). The extreme range of temperature in the shade, from $45\cdot3^{\circ}$ to $64\cdot0^{\circ}$, was recorded on one and the same day—Monday. The rainfall was ·154 inch on two days, ·119 inch being measured on Wednesday. The prevalent winds were S.W.

The rainfall in Dublin during the nine months ending September 30th amounted to 21·971 inches on 165 days, compared with 10·968 inches on 112 days during the same period in 1887, 19·537 inches on 143 days in 1896, and a twenty-five years' average of 19·734 inches on 142·8 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 3·625 inches distributed over 15 days. Of this quantity 2·700 inches fell on the 1st. At this station the rainfall since January 1, 1897, has been 29·570 inches on 158 days, compared with 17·091 inches on 118 days in the same nine months of 1893, 25·896 inches on 137 days in 1894, 23·665 inches on 117 days in 1895, and 21·912 inches on 115 days in 1896.

At Cloneevin, Killiney, Co. Dublin, the rainfall in August was 4·50 inches on 21 days (the maximal fall in 24 hours being ·76 inch on the 29th), compared with a twelve years' average of 2·887 inches on 16·5 days. In September 2·33 inches fell at Cloneevin on 14 days. The maximal fall in 24 hours was 1·42 inches on the 1st. On an average of twelve years the September rainfall at this station has been 1·773 inches on 12·1 days. Since January 1, 1897, 22·91 inches of rain have fallen at Cloneevin on 158 days. The rainfall in the first nine months of the year at Cloneevin was 22·92 inches on 150 days in 1894, 21·58 inches on 129 days in 1895, and 20·50 inches on 129 days in 1896.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell in measurable quantity on 11 days during September to the total amount of 3·166 inches. On the 1st the record was as large as 2·308 inches—more than two-thirds of the entire rainfall for the month. The highest temperature in the screen was 68° on the 14th, the lowest was 41° on the 10th.

PERISCOPE.

EXAMINATION OF CANDIDATES FOR HER MAJESTY'S ARMY AND INDIAN MEDICAL SERVICES.

THE following are the papers which were set at the Examination held in July and August, 1897 :—

Medicine and Pathology.—Professor M'Call Anderson. Saturday, July 31st, 1897, from 2 p.m. to 5 p.m. N.B.—The replies to be written with the ink provided, and not with a pencil or pale ink.

1. State fully what the symptoms in the following case imply, giving the grounds for your diagnosis; and what anatomical lesions would you expect to find in the event of a fatal issue:—A baker, aged 26, whose family and personal history in early life were good, was admitted into hospital on 1st January, 1897. Six years before, after a chill, he was seized with fever, profuse sweating, and pain and swelling in many joints, large and small. The joint affection was erratic—flitting about from joint to joint—but, when he recovered, their shape and mobility were in no way impaired. Three years thereafter—having in the interval apparently enjoyed excellent health—he began to suffer, in an increasing degree, from breathlessness and palpitation on exertion, sometimes accompanied by præcordial pain. On examining the heart the apex beat was found to be displaced considerably downwards, and to the left of the nipple line, with a corresponding increase of the cardiac dulness, and there was a murmur at the apex accompanying the first sound, with accentuation of the second pulmonary sound at the base. Three months before admission he became suddenly paralysed on the right side, without loss of consciousness. The palsy of the arm and leg was nearly complete, that of the face partial, and mostly of its lower segment. At the same time he entirely lost the power of speech, although he could read quite well, and understand everything that was said to him. A few weeks later the following symptoms gradually supervened on the paralysed side:—Increasing rigidity, tremors on exertion, exaggerated deep reflexes, and occasional spasms of the affected limbs. 2. How can hæmaturia be diagnosed, and what would lead you to suspect that the lesion was in the bladder, and not in the urethra or upper urinary passages? 3. Describe the symptoms consequent upon a lesion involving the whole of the right internal capsule, and state what you know of “conjugate deviation” of the head and eyes,

and of "early" and "late rigidity." 4. How would you treat—(a) Passive congestion of the system due to dilatation of the heart. (b) The "night sweats" of phthisis. (c) Myxœdema?

Anatomy and Physiology.—Mr. Makins. Saturday, July 31st, 1897, from 10 a.m. till 1 p.m. 1. Describe the triangular ligament of the urethra. State how it is formed, and what structures are in relation with it. 2. Describe the form, position, and relations of the spleen. What theories exist as to its function? 3. Describe the structure of heart muscle. 4. Give an account of the theories of its rhythmical contraction. Give the course and distribution of the Plantar nerves.

Chemistry and Materia Medica.—Dr. Norman Moore. Friday, July 30th, 1897, from 10 a.m. till 1 p.m. 1. Describe an experiment by which the presence of carbonic acid in expired air may be demonstrated. 2. How is chlorine made? What are its properties? 3. What are the preparations of opium in the Pharmacopœia, and what proportion of opium does each contain? 4. Mention the chief anthelmintic drugs of the Pharmacopœia. State the method of administering each and the dose of each for an adult. 5. What drugs affect the quantity of the urine, and what drugs affect its physical characters?

Natural Sciences.—Dr. Norman Moore. Thursday, August 5th, 1897, 10 a.m. Candidates may answer not more than six questions, and they must confine themselves to two branches of science only.

Zoology and Comparative Anatomy:—1. Describe the circulatory system of one of the following animals: lobster, cuttlefish, frog. 2. How are the offspring of mammalia nourished from the commencement of intra-uterine life till independent of any maternal aid? Mention the chief varieties in the structures concerned in the processes of nutrition of the embryo. 3. Describe the poison apparatus of a venomous snake.

Botany:—1. Mention the characteristics of the following natural orders: ranunculaceæ, cruciferæ, solanaceæ, umbelliferæ. 2. Write a full account of the structure of one of the following:—potato, acorn, mushroom. 3. What are the chief natural means by which seeds are scattered? Give one example of each method. *Physics:*—1. What is meant by "universal gravitation"? How does the attraction of gravitation differ from that of magnetism? 2. Define the terms ductility, malleability, elasticity, specific heat, latent heat. 3. Describe the siphon, and explain its action in conveying liquids from an elevated vessel to a vessel at a lower level. *Physical Geography and Geology:*—1. How would you recognise an extinct volcano? Name the chief active

volcanic regions of the world. 2. In what parts of the British Isles does Lias occur? What are its characteristic fossils? 3. What observations would lead you to believe that glaciers had formerly existed in a mountain region where none are at present to be seen?

Surgery.—Sir William MacCormac, Bart. Friday, July 30th, 1897, from 2 p.m. till 5 p.m. All four questions to be answered. 1. Give the causes, pathology, and treatment of ankylosis of the temporo-maxillary articulation. 2. What causes may induce hæmaturia of vesical origin. Omitting operative details, give the diagnosis and treatment. 3. Give the pathology, symptoms, diagnosis, and treatment of carcinoma of the large intestine. Illustrate your remarks by an example of the disease affecting the sigmoid flexure. 3. Enumerate the causes which may produce thrombosis of the brachial artery, and give the pathology, symptoms, and treatment.

PROPHYLAXIS OF TUBERCULOSIS AT ERFURT.

OUR foreign exchanges are commending the new regulations at Erfurt, a town of 80,000 inhabitants, which not only requires the notification of every death from tuberculosis and free disinfection of the apartments, but also examines free of charge specimens of suspected sputa, on application to the bacteriologic laboratory, the first public institution of the kind free to the public for this purpose. If Koch's bacilli are found, the individual is carefully instructed in the necessary measures.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XVIII.—*Operation in Intestinal Obstruction.** By SIR WILLIAM THOMSON, President, Royal College of Surgeons, Ireland; Surgeon to the Richmond Hospital.

I WAS reading the other day some of the late Sir Benjamin Ward Richardson's papers, when I came upon one bearing the title—"What is the proper time for Surgical Interference in Intestinal Obstruction?" He was a close clinical observer, and a broad-minded cultured physician, and I read with the greatest interest his discussion of this question. We have to deal with the fact that these cases usually come, in the first instance, into the hands of the medical rather than the surgical practitioner. It is reasonable to expect that this should be so, for the ordinary sick man does not see that there can be anything involving operation in an attack which popularly is described as a pain in the stomach with vomiting. The paper suggested to me that I might ask your attention to a few points in connection with this subject. It has often been before the Academy and other like bodies, but all acknowledge the difficulties which surround it; and it can only be by further observation and careful noting of signs and symptoms that we can make any approach to an answer which, as deciding a course of treatment, can be of any real benefit.

*An Introductory Address delivered at the Surgical Section of the Royal Academy of Medicine in Ireland, on Friday, November 12, 1897.

The initial difficulty which we encounter is that there are so many conditions threatening life which present symptoms of an almost identical character. We are accustomed to take three of these as very typical—pain, vomiting, and constipation—and as practically constituting a guiding trio. But if we apply them as a test to the reading of a case we find ourselves bound to include such affections as peritonitis, gall-stones, volvulus, strangulation, pressure of tumours, stricture, and even a calculus in the ureter. Now, not all of these require operation of necessity, and, therefore, we must seek for other elements of help. The age of the patient, the antecedent history, the condition of the abdomen, the amount of distension, whether the constipation has been chronic or has been gradually increasing, the character of the urine, the quality of the fæces, the temperature—which is not very reliable—and the actual constitutional state of the patient as indicating collapse or shock.

Now the tangle to be unravelled is a very troublesome and serious one. It is often said that we see these cases too late, and that is true; but let us be quite fair about this matter. We generally see the case when the question of operation and no other is to be determined. If we had seen the patient at first we should in most cases have been just as reserved as our colleague, and all I would suggest is that a surgeon should be consulted early, in order that, if operation is necessary, he who becomes the responsible actor should be able to select the most suitable time for his operation.

And I must say, further, that all surgeons are not agreed as to operation at all. You all recollect, I have no doubt, the dicta of Mr. Jonathan Hutchinson, a wise and very experienced surgeon. Before the British Medical Association, in 1878, he advocated taxis in obstruction, and declared that “in the present state of surgical knowledge exploratory operations for the relief of abdominal obstruction, the cause of which cannot be diagnosed, are not warrantable.” Elsewhere, however, Mr. Hutchinson introduced the alternative—“or the operation can be made much less dangerous,” which in these days makes a difference.

It is only nineteen years ago since this opinion was expressed by so sound a surgeon; but it is a proof of how

rapidly we have travelled in the interval when I mention that in the year following Mr. Howard Marsh mentions in a paper that "several operators have reduced the mortality of ovariectomy to less than 30 per cent." Well, the 30 per cent. has been abolished, and we are doing much better in operation for intestinal obstruction. Let me refer again to the physician Richardson in this connection. He says, "I fail to find in the list of examples which have come under my notice during a long career, one single instance in which recovery has taken place after the appearance of stercoraceous vomiting in the acute form, except in one where operation was carried out. . . . We did not operate in another case because we were in the dark. My argument in such a dilemma now would be—"Because we are in the dark let us let in the light." That is, I think, a concise way of putting the modern surgical view.

Let us just consider in order the symptoms which belong to this condition of acute obstruction. It is an advantage to group them, and if possible to recognise their true significance.

I take vomiting first. In its ordinary form this is a symptom which attends many constitutional states which have nothing whatever to do with the affection we are considering. But here the vomiting has certain peculiarities. It is not the first symptom. It follows the onset of abdominal pain which has come on suddenly or gradually, and we have therefore the occurrence of two symptoms which have great importance. The vomiting varies as to quality, and this has a certain relation to the position of the obstruction. If this is high up—in the region of the duodenum, or jejunum—the vomiting comes on very quickly, because they are very sensitive viscera. But the material ejected is not stercoraceous in the ordinary sense. It first consists of stomach contents, and then of material undergoing digestion in the first reaches of the intestinal canal. But as we go lower down to the end of the small intestine, and get to the large intestine, the vomiting comes on at greater interval from the origin of the attack, passes through the stages I have noted, and then becomes stercoraceous, just as we so often see it in strangulated hernia. Therefore I think it will be admitted

that vomiting in these cases does tell us, by the order of its appearance and its character, that we have to deal with obstruction, and where that obstruction probably is.

This symptom is of great importance, and it was upon it that Sir Benjamin Richardson answered his own question when he said, "Is there any single symptom which, being present, says at once and imperatively, in cases of acute obstruction of the intestinal canal, now is the time—whatever may be the diagnosis of the case—now is the time to operate. . . . I answer there is such a symptom, and the symptom I refer to is that of stercoraceous vomiting." The late Mr. Greig Smith laid down a working rule which was—that operation should be undertaken if pronounced vomiting had occurred three times. Of course there was no special virtue in the number. It only gave a reasonable time to make the character of the symptom clear.

Pain is of value in locating the trouble within the abdomen, but it rarely indicates the actual site of the obstruction. It has, however, characters of its own. In chronic obstruction it is not severe; and it differs from that of the acute affection which comes on suddenly, and is usually intense. Sometimes there are intervals of quiescence, sometimes the pain may be almost continuous, and the difference seems to depend upon the tightness of a constriction, and on whether there still remains any portion of the lumen through which matter may pass.

Temperature is often misleading, and is only to be mentioned to warn against reliance being placed upon it. How often have we seen patients die of peritonitis, and yet the chart gave little or no indication of the intensity of the disease?

On the constipation itself we must also not place too much reliance. It depends very much upon the position of the stoppage. If it is high up in the intestine, motions may persist for some time, and even a diarrhoea may appear for a day or two. If the stoppage is in the large intestine we have the constipation from the outset, although sometimes a loaded rectum, below the point may puzzle us by discharging its contents.

A good deal of weight has been attached to the presence

of dulness in the loin in these cases, due to free fluid in the peritoneal cavity. It is not always present. It depends upon peritonitis, but that is not always of the serous variety, and no appreciable exudation may be present. When it is present it is, however, a valuable aid, and should be looked for. Here I may recall some cases reported before the Clinical Society of London in 1879 by Dr. Markham Skerritt, of Bristol. In the first there was intestinal obstruction, with fibrinous exudation. During life there was dulness in both flanks when the patient lay on his back. It could be detected as high as the anterior superior iliac spine. When the patient was turned on his side the side which was uppermost became very resonant, and during the progress of the case the sign became more marked. *Post mortem*, it was found that there was no fluid in the peritoneal cavity, but the intestines were filled with fluid fæces and gas. In the second case the dull note could be produced up to the anterior superior iliac spine; the resonance appeared when the patient was placed on his side, and on *post-mortem* examination no fluid was found in the peritoneal cavity. Dr. Skerritt says the peculiarity was due to the fact that the gas and fluid in each coil of intestine necessarily obeyed the same physical law as do the gas-containing intestines and the free fluid in ordinary ascites—that is, that the gas would rise to the top in whatever position the patient lay, and the fæces would fall to the bottom. The observation is an important one. Fluid in the loin is not invariably present; and we may be betrayed into a declaration that it is there when in reality it was not there, and when the signs are due to the fluid and gas within the intestine itself.

Two other localising symptoms may be mentioned—the increase in the indican of the urine found by Jappe when the small but not the large intestine is obstructed; and the second described by Dr. Barlow in “Guy’s Hospital Reports” for 1844. He declared that urine was suppressed just in proportion to the nearness of the stoppage to the beginning of the small intestine, and that this does not occur where the large intestine is engaged; but this is not invariably true. Other considerations are the character of the distension and the time of its appearance. It is naturally somewhat slow

to become evident when the mischief attacks the large bowel, but once it begins it extends rapidly. In the case of the small intestine, if the obstruction is high up, the abdomen ought not, theoretically, to become distended. But even here other things happen to upset our expectations. If peritonitis supervene we may expect some adhesions or bendings here and there which will stay the passage of flatus to the anus, or the injury to the bowel may be such as to produce paralysis, and so be followed by the accumulation of gas within the gut.

Added to all these, however, we must add for consideration the general condition of our patients, the character of the facial expression, and the collapse which in some form is always present, and is even progressive.

I have brought before you a series of tests which are generally accepted in the effort to clearing up the problem before us, and I have tried to point out their individual value. If we were able to apply them all to any case we should probably have small difficulty in dealing with it. But unfortunately that is not so, and our success will depend upon the ability with which we can select such a combination of them as will lead us aright. I place the greatest value upon vomiting of a stercoraceous nature, but we should not fail to avail ourselves of every possible corroborative element.

You have gathered from what I have said that I wish only to deal with the surgical aspect of this great question. I wish to start from a recognition of the affection, and leave out of consideration all medical treatment. But indeed, in the vast majority of cases of acute obstruction to which I have confined myself, there is no room whatever for medical treatment. It is only time lost. And passing first to what may be called bloodless surgical interference—taxis—I must declare that it has no attraction whatever for me. Here and there a case may recover, but the surgeon ought to be sure not only of the locality of the obstruction, but also of the very nature of it, before he begins to manipulate the whole mass of intestines. What would happen if a nipped bowel were almost gangrenous, or if the intestine were distended like a drum?

Two days ago I was returning the bowel in a case of large

hernia, when, even under very moderate pressure with my fingers, the peritoneum suddenly snapped with a sound like a small explosion, and there was a bleeding rent of a couple of inches long. Would this be a desirable injury to add to the peritoneum in a case of acutely obstructed intestine? I think not.

The whole of the opposition to operation in these cases is based upon the unfortunately fatal results which have followed it. But I am glad to say that these are becoming less in number just in proportion as the great gravity of the affection is being realised. We may ask in return what proportion of cases not operated upon recover? We hear of the sloughing away of a volvulus and such things, and the patient gets well. But how many? These things are practically miracles—they are contrary to the course of nature. We do not conduct the ordinary affairs of life on the supposition that a miracle is likely to happen; and I suppose a practitioner who relied on medicine to cure, say a strangulation, would be horrified if it were put to him that that is practically what he is doing. Granted the recognition of the character of the case, there is only one thing to be done, and that is—to explore. It is not the opening of the abdomen that kills; it is the fact that that is usually done when by delay everything is arrayed against success.

ART. XIX.—*Significance of Dilatation or Gastrectasia in Functional and Organic Diseases of the Stomach.*^a By M. A. BOYD, M.D.; Physician to the Mater Misericordiæ Hospital, Dublin.

GASTRIC dilatation, or gastrectasia, in one or other of its forms, is so frequently present in almost all organic or functional affections of the stomach, and its existence is so frequently overlooked by us in hasty examinations of that organ, that I may be pardoned for going into the details of the various affections in which this symptom is met with. I may say, at the outset, dilatation of the stomach is not a disease, but only a symptom of disease.

^a Read in the Section of Medicine of the Royal Academy of Medicine in Ireland, March 12, 1897. [For the discussion on this paper, see page 65.]

Gastric dilatation presents itself in two forms—complete dilatation and incomplete or partial dilatation.

In complete dilatation all the coats of the entire stomach are stretched, and its cavity enlarged to twice or perhaps thrice its original size, the organ extending across the abdomen from one hypochondriac region to the other; or when the stomach is dislocated downwards by the weight of its own fluid contents and the yielding of the gastro-hepatic ligaments, we may find it occupying the entire of the lower portion of the abdominal cavity, extending from one iliac region to the other. In the second form—incomplete or partial dilatation, sometimes spoken of as distension of the stomach, which is quite a different condition—we find only one portion of the stomach dilated—the cardiac end. That this form is a true dilatation and not a distension is shown by its liability to persist as long as the causes that produce it are present; in this it resembles dilatation of the cavities of the heart. In this variety the dislocation is upwards, by which I mean the yielding of the stomach wall at this portion causes it to press upwards against the diaphragm, or upwards and to the left in front of the spleen, where it does not meet with the same resistance as is offered by the diaphragm.

When the latter is in a lax condition the dilated stomach presses directly upwards against the heart, producing a sense of uneasiness in the cardiac region, pain in left side, and occasional attacks of syncope.

The first variety, or that of complete dilatation, is mainly associated with organic disease of the stomach itself, accompanied by obstruction at the pyloric end. Obstruction giving rise to this aggravated form of dilatation is traceable to conditions in the pylorus itself, or the walls of the stomach in its vicinity, or to conditions outside of them. As a rule it may be broadly stated that persistent dilatation in an aggravated form is always due to lesions within the stomach cavity. The causes acting from within the stomach leading to obstruction of the pylorus in the order of their frequency, according to my experience, are—(a) Cicatrization of simple ulcers in the neighbourhood of pylorus; (b) Malignant disease attacking the pylorus; (c) Fibroid thickening of pylorus, the result of inflammatory changes; (d) Inflammatory conditions of the mucous membrane of the stomach and pylorus, leading to pyloric spasm (such is the condition found

in fatal cases of what is called the acute dilatation of alcoholics); (e) Foreign bodies—such as coins or plum stones—retained in the stomach and forming sacculated diverticula in the neighbourhood of the pylorus; (f) Pedunculated tumours growing from the wall of the stomach and falling against the pyloric opening.

The causes arising outside the pyloric walls leading to obstruction and dilatation are—(a) Pressure on the pylorus and duodenum by an enlarged organ in its vicinity, such as we find in some forms of enlargement of the liver or gall bladder; (b) Tumours in the fissure of the liver especially; (c) Pressure on pylorus of peritoneal or retro-peritoneal tumours; (d) Floating kidney; (e) Cystic disease of kidney pressing forward; (f) Kinking of duodenum or pylorus from non-yielding of gastro-hepatic ligaments, when stomach is dragged down by the weight of its own fluid contents when in a dilated condition.

If we direct our attention to the second form of dilatation, which I have alluded to as partial, and which is the form most frequently met with in all functional gastric troubles, and consider the causes that give rise to it, we find these causes for the most part associated with derangements of digestion, where from alteration in the gastric contents gases are generated, which by their continued distending action lead to dilatation of the stomach cavity; but the most frequent cause of this partial dilatation, in my experience, is an atonic condition of the muscle wall of the stomach, and as the cardiac end is the most muscular portion an atonic condition of this muscle is more likely to be followed by yielding of this particular end than towards the pyloric one, which is more fibrous in structure. This form of dilatation is consequently found in all adynamic conditions. It is present in all forms of anæmia, pernicious anæmia included, and is constantly present in chlorosis, but not where gastric ulcer is associated with that affection, as the condition of the stomach in gastric ulcer is the very opposite to that of dilatation—namely, one of irritable contraction of its muscles from the irritation produced by the ulcer and the excess of HCl present with it.*

* When dilatation of the cardiac end is present in association with gastric ulcer, hour-glass contraction of the stomach is usually found.

You find this form of dilatation in nearly all cases of advanced phthisis, also as a consequence of long-continued illnesses with pyrexia, such as in typhoid fever, being frequently present during the convalescent period following that affection.

You find it accompanying the exhaustion of long-continued suppuration either in bones or elsewhere, also after many of the exanthemata and after influenza. In children such form of stomach dilatation follows sub-acute gastritis or gastro-enteritis, but dilatation is rare in children except from this cause. We meet with it in that important form of degeneration of muscles characterised by fatty changes, and also in chronic alcoholism which is frequently accompanied by such changes. Acute dilatation, due to paralysis of the essential nerves of the stomach (the pneumogastrics) should be mentioned here, but it more properly belongs to the graver form of dilatation.

Having enumerated the causes that lead to both forms of dilatation I will briefly allude to the symptoms characteristic of each.

In the first form there is aggravated dilatation, and sooner or later the stomach is dislocated downwards. The symptoms of this condition are most characteristic. Prominent amongst these symptoms is vomiting. This vomiting differs in the time at which it occurs, and in its character from the vomiting that takes place in other affections of the stomach; it does not take place after a meal, nor does it come on once a day, or twice a day, but generally every other day, and frequently takes place only at night (a most characteristic symptom of dilatation), or the intervals between attacks of vomiting may be extended to days, or even to a week or longer.

In other forms of stomach affection where vomiting occurs it is usually the result of some article of diet that disagrees, or some inflammatory or irritable condition of the stomach produced by food, and the vomiting as a rule follows the ingestion of such food; such is the condition of things in gastric ulcer and acute and sub-acute gastritis. Though patients with dilated stomachs do not suffer from vomiting after food, some hours after food is taken they complain of pain, heartburn, and gaseous eructations, which are re-

peated after each meal, and which are ultimately only relieved by vomiting.

When the intervals between acts of vomiting are counted by days the stomach in my experience is usually found dislocated and very much dilated.

In no other gastric affection accompanied by vomiting is the vomited matter so acid or so large in quantity as in cases of dilatation. Patients themselves will express the opinion that they vomit more than they eat or drink. The vomited matter is, as a rule, frothy, and when allowed to stand for some time bubbles will appear on the surface, due to fermentation and the evolution of gases.

If we examine it chemically, and by the aid of the microscope it will be found that the acidity is rarely due to hydrochloric acid, but to the volatile or organic fatty acids—lactic, butyric or acetic. Microscopically we find great numbers of fungi associated with fermentation—*sarcinæ* when the liquid contents are retained for a considerable period, say a number of days; *torulæ* when the intervals between the attacks of vomiting are shorter. We find also bacteria in great numbers. During normal digestion bacteria are never found, nor are they likely to exist in healthy gastric contents, more especially the hurtful organisms which are destroyed by the antiseptic action of the hydrochloric acid in the gastric secretion. In aggravated cases of dilatation this acid is found in only small quantity—not sufficient to kill off bacterial growths, which continue to grow and generate toxins.

The most salient and characteristic physical sign of dilatation is splash on succussion of the stomach. It is not easy in all cases to ascertain the presence of this peculiar splash. Mere jogging of the stomach alone in one direction or another will not always determine its presence, and especially if this manœuvre is confined to the epigastric region alone. When dislocation has taken place the entire abdominal cavity has to be searched before this symptom is elicited even though dilatation to a formidable extent is present. It is also absent in many cases, owing to the stomach being emptied by vomiting previously, and after lavage by the stomach tube, as a considerable quantity of fluid and air must be present for its production. To nothing can I better compare this

peculiar splash than the sound produced in an incompletely filled water bed by jogging or shaking it, or to the splash produced in a water tank by agitation. It has come to be known by the students of our hospital as the water-tank sound of dilated stomach.

Another constant symptom of the graver form of dilatation is obstinate constipation, the bowels often not moving without the aid of purgatives for days or even weeks at a time, and then only imperfectly, the evacuations being dry and lumpy, and lodgments in the colon being not an infrequent accompaniment. This condition always indicates a very considerable narrowing of the pylorus, through which the stomach contents are not passing, and the intestines losing the stimulus which the stomach contents afford, cease to secrete and pass themselves into an atonic condition. If with this dryness of the bowel vomiting of all stomach contents is constantly taking place a desiccation of the tissues ensues, and some authorities consider a fatal termination results from this cause more than from any other. Tetany, extending from the muscles of the abdomen to the extremities and muscles of the neck and back, often accompanies this condition, and I have seen it prove fatal. This tetany would seem to be due not so much to this desiccation as to the absorption of some toxin from the stomach contents. Another symptom associated with dilatation, and generally indicative of considerable obstruction at the pylorus, is visible contraction of the stomach seen through the abdominal wall. The contractions generally travel from left to right, and may be excited by pinching or stroking over the stomach. They are due to hypertrophy of the muscle wall of the stomach in trying to force its contents through the narrowed opening of the pylorus, such hypertrophy being similar to what occurs in the left ventricle of the heart in aortic obstruction. Cramp in the fingers is frequently complained of by patients the subjects of dilatation, and nodular growths on some of the joints of the phalanges are present in a great many cases, as pointed out by Bouchard. Coldness of the feet and hands, and redness of the nose, acne of the face and back, and attacks of urticaria are frequent symptoms. We sometimes find evidences of vaso-motor disturbances, such as sweating of the face and body, often of one side only, and accompanied

by a peculiar pungent, acid smell, probably due to the elimination of the fatty acids by the skin.

I will now direct your attention to the symptoms that are indicative of the second form of dilatation I have alluded to as that of partial dilatation. As this form of dilatation is found accompanying almost all the stomach affections known as dyspepsias, it is constantly present in that form of functional derangement known as catarrh of the stomach, an affection which may arise from ordinary cold-catching, as a patient may get a cold in the stomach as readily as in the head or throat. It is also found in the gastric catarrh associated with cirrhosis of the liver, and with valvular lesions of the heart where the liver is enlarged. Gastric catarrh, however, owes its origin more frequently to ingestion of unsuitable food or liquid, which when retained too long in the stomach (the gastric secretion being defective) undergoes fermentative changes, such, for instance, as the catarrhal dyspepsia which is so common an affection in those who live constantly on tea and uncooked starch foods.

Here not only the quantity of the liquid taken, but the character of the food, is favourable to fermentation and the formation of the fatty acids. We find as articles of diet amongst the poor bread unsuitably baked, or other badly-cooked starchy food, such as potatoes, which are very prone to undergo fermentative changes, leading to the formation of acids, especially acetic acid. Amongst the poor, too, there is a great tendency, when dyspepsia is present, to seek relief by means of alcohol in some form. The alcohol taken under these conditions is liable to contribute still more to the acetic acid fermentation, and to cause with lactic and butyric acids the acrid sensation and heartburn such patients so frequently complain of.

You will always find the minor form of dilatation present in such cases if you look for it, and the splash characteristic of it in the left epigastric and hypochondriac regions. In a former portion of my paper I alluded to the frequency with which this minor form of dilatation is met with in all atonic conditions; in some cases it would seem that an intrinsic atonic condition of the gastric muscle just as frequently results from the poisons that are absorbed into it during defective digestion, and directly paralyse its

functions. Türck has quite recently investigated the toxins of the stomach in cases of gastritis associated with dilatation, and found that the filtered contents injected into rabbits produced paralysis in an hour and a half, and in larger doses killed. A reference to his paper will be found in the *New York Medical Journal*, February 22, 1896.

Constipation in patients the subjects of the minor form of dilatation is a very frequent symptom, but not to the same extent as in the graver form, and vomiting as a rule is not present, the stomach contents ultimately finding their way into the intestine, by which they are absorbed with the toxins contained in them, and which produce the vague, nervous symptoms such patients complain of. Amongst these symptoms hypochondriasis is a common one, weariness on the slightest exertion and a disinclination for exertion. Headache, pain in the left side, and palpitation of the heart, and transient or intermitting anæmia are frequently present also. You also find symptoms referable to the lungs, throat, or bronchi in dilatation of the stomach where the contents are for some time retained, especially in the more aggravated form of the affection. I have lately had under my care in the Mater Misericordiæ Hospital a patient with dilatation, who, while undergoing some preliminary examination of his stomach contents preparatory to lavement, got a severe attack of spasmodic asthma to which he was not previously liable; he had not vomited for days previously and succussion showed the stomach dilated and filled with fermenting contents. In the middle of the night, without being exposed to cold in any way, he got an attack of asthma with considerable dyspnœa and bronchial obstruction, which persisted until his stomach was washed out, when it gradually subsided. That his attack of asthma was due to some toxin absorbed from his stomach I think there could have been no doubt. What the nature of that toxin was I am unable to say; possibly it may have been due to the fatty acids—butyric or lactic—being eliminated by the bronchial mucous membrane. They are principally eliminated by the skin, but also by the lungs, and it is possible the attack of asthma in this case may have been due to their elimination by this channel.

We know other toxins in the blood produce asthma—

uræmia and gout for instance—and we know that many of the toxins formed in the stomach affect the individual in various ways, some of them causing spasm and cramps, and others, as in Türk's experiments, causing paralysis and neuritis. The most reliable symptom indicative of the partial form of dilatation, as it is of the graver form, is splash on succussion. This splash in cases of left-sided dilatation is invariably found when the stomach contents are delayed and fermenting, and is never found in a healthy stomach, no matter what the amount or what the character of its contents. It can always be obtained by succussion of the stomach in the left epigastric region in an upward and outward direction in a line between the umbilicus and the left costal cartilages. When the stomach is dilated but empty a tympanitic note takes its place, with this difference—that the tympanitic note is heard over a large area of both the left epigastric and hypochondriac regions, and extending from here upwards to the left nipple, and outwards from this level to the mid-axillary line. Under few circumstances is a tympanitic note heard in this situation, differing from that of ordinary thoracic resonance, except in dilatation of this end of the stomach. It is consequently always as reliable of this condition as the splash sound, and both together are conclusive.

Our methods of diagnosis at the Mater Misericordiæ are:—If in an hour or two after a test meal splash is elicited, or splash and a tympanitic note extending to or near the nipple line, dilatation is diagnosticated. If the splash is heard at the end of five hours or longer an atonic condition of the muscle wall of the stomach is assumed to exist. To ascertain whether the dilatation is due to fermenting contents or atony alone, we siphon off the contents at different periods after the test meal and examine it chemically. If lactic acid persists for some hours after the test meal, hydrochloric acid being absent, or present in only small quantities, lactic acid fermentation is present; if it is constantly present, with hydrochloric altogether absent, cancer of the stomach or of the pylorus is usually diagnosticated.

If butyric, lactic and acetic acids are found, there is no doubt that fermentation of food contents is going on. If the solvent power of the pepsin present is feeble in its action on

proteids, or produces no solvent action on them, secretion is defective, or atrophy of gastric glands is diagnosticated. For the determination of the existence of hydrochloric acid either Toepfer's test (dimethyl-amido-azobenzol), the benzo-purpurin, and Günzburg's phloro-glucin and vanillin tests are used. For the detection of lactic acid a watery solution of perchloride of iron is used, which is a very certain test. Butyric and acetic acids are detected by their smell when the filtered gastric contents are treated by ether, which extracts them out.

The chemical test for an atonic condition of the muscle wall of the stomach (the pylorus being pervious) is the administration of salol, which is unchanged by the stomach, but splits up into its component elements phenol and salicylic acid when it reaches the intestines, the salicylic acid being secreted by the kidneys and appearing in the urine as salicyluric acid.

If this acid is not found in the urine until some hours after the administration of the salol an atonic condition of the muscle wall of the stomach is assumed to exist. For the extraction of the contents of the stomach we find the ordinary siphon india-rubber tube, such as is used for washing-out purposes, quite sufficient. When passed into the stomach and allowed to remain for a few minutes the part projecting in front of the teeth is throttled and held so until withdrawn; a drachm or two of the contents of the stomach is found in the end of the tube near its point, which is found quite sufficient for all purposes of examination. The tube and funnel which I use for both extraction and washing-out has a stop-cock fitted to it, which ensures all air being shut out in the process of extraction.

The title of my paper did not include a description of the methods of treatment in cases of dilatation, but I do not wish to dismiss the subject without a few words on that all-important point. For cases of the graver form of dilatation associated with obstruction at the pylorus, where, arising from within the stomach, a suitable pyloroplasty, or gastro-enterostomy, is the only form of treatment likely to produce a cure, or to procure amelioration of the distressing conditions present; and when contractions and cramp of the

stomach or symptoms of tetany arise, operation should be urged at once.

The only other alternative to procure temporary relief is washing out the stomach. I know of no other treatment in the graver form of dilatation which brings so much comfort to our patient, and even in the lesser form of dilatation I have no hesitation in resorting to it when catarrh of the stomach with fermentation and acidity distress the patient. It is not necessary I should describe the methods of its performance, but a few words as to the best time for doing it may not be out of place. Lavage of the stomach is always best done in the morning before food is taken, as by that time the food of the previous day, if not digested normally, is at all events liquefied sufficiently either by fermentation or by growing colonies of bacteria to prevent its blocking the tube in the process of extraction. Having ascertained the size to which the stomach is dilated, from a pint to two pints of hot water is first injected through the tube and then siphoned back, so as to thoroughly wash the cavity. Next, a pint of some alkaline solution is introduced without withdrawing the tube, and allowed to remain for a few minutes while the stomach is agitated between the fingers, and then siphoned back and the tube withdrawn.

The selection of the solution is not a matter of much importance—lime water answers very well, or a few teaspoonfuls of bicarbonate of soda, potass, or lithia dissolved in a pint of hot water, or if the breath is foetid some boric acid, peroxide of hydrogen, or sanitas may be substituted.

Türk has lately introduced a novelty in the shape of an instrument for gastric dilatation, which he has called a *gyromele*. This instrument consists of a flexible cable, to the end of which is attached a spiral spring covered with a sponge. To determine the outlines of the dilated stomach the tube is introduced into the organ, and the apparatus set in motion. The revolving sponge can be easily palpated through the abdominal wall along the entire length of the stomach. The *gyromele* can be used as a therapeutic agent as well. In chronic catarrh of the stomach the revolutions of the sponge are extremely useful in effecting the removal of mucus from the surface of the mucous membrane, while in atonic conditions of the organ the friction thus applied to its

inner surface acts as a stimulant to the muscular tissue. Weak solutions of nitrate of silver on the sponge have been recommended as an application to the mucous membrane in this manner. Massage of the stomach is also a most important method of treatment in the atonic variety of dilatation. Electricity I have tried, but I am disappointed with it, and rely more on careful massage to effect good results.

To check fermentation I generally prescribe creasote or carbonate of guaiacol combined with bismuth, or sulphurous acid, or the hyposulphites, just as I find them to agree best; and where pain is present iodoform, carbolic acid, or ichthyol in pill combined with opium or Dover's powder.

The minor form of dilatation is generally very amenable to treatment, careful regulation of the diet being in many cases the principal treatment necessary where injudicious dietary leading to fermentation is the cause. When a certain amount of catarrh is associated with this I find the alkaline carbonates—especially the bicarbonate of soda, with nuxvomica and a vegetable bitter, taken before food—very efficacious; it has the double property of dissolving mucus and exciting a more healthy acid secretion afterwards, besides lessening the tendency to acid fermentation. The addition of bismuth to such a combination is also very comforting if there is much gastralgia or heartburn present. If after this treatment for some days splash is still elicited four or five hours after a meal, an atonic condition of the gastric muscle is probably present, and I then give, in addition, four or five drops of liquor strychninæ after each meal. I consider no other drug to compare with it when a lax and atonic condition of the stomach wall exists. Purgatives given at the same time have a most wonderful influence in emptying a full, dilated stomach; the peristalsis of the intestine excited by them seems to be communicated to the gastric wall reversely and to excite its contractions. Where catarrh is chronic and constantly leading to dilatation occasional lavage combined with the above treatment will generally effect a cure. Pepsin, though often prescribed in such cases, I have little faith in as a means of treatment. It is at best but temporising, and its administration seems to me both unscientific and useless; in my experience it often

sickens the patient and increases the dilatation present, and certainly it does not lessen the fermentation.

In cases of atrophy of the gastric glands, and of marasmus in advanced cancer of the stomach walls, when combined with hydrochloric acid it assists the patient to digest proteids, but it is not as efficacious with a mixed diet in this respect as many of the malt extracts.

A consideration of the various kinds of food suitable for the different conditions that lead to dilatation I have not touched on, and I have contented myself with calling attention to the more obvious methods of treatment I have found usually efficacious.

ART. XX.—*Beri-beri and the Diseases Confused with it.*

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THE persistent epidemic of the disease, grotesquely called beri-beri, in the Richmond Asylum, Dublin, has attracted the attention of medical men in the tropics who are familiar with it. I have, however, not yet seen any clinical account of the Richmond outbreak, nor has its origin, I think, been clearly established. Owing to a confusion of ideas, which it is the object of this article to make clear, medical men in India are often expected to be acquainted with beri-beri, though, as a matter of fact, many have never seen a case of the endemic neuritis of Pekelharing and Winkler, to which alone the name beri-beri is correctly applied.

Many years ago Malcomson, writing in Madras, described cases to which he gave the name *beri-beri* (an expression utterly unknown by any native of India). These, it is clear, had the characteristic symptoms, nervous and cardiac, which the researches of Pekelharing and Winkler have shown to be pathognomonic of the disease. If these are absent, the disease cannot be beri-beri. Unfortunately other cases were described of a cachexia in which œdema of the feet, ankles, and legs, and dropsy of the serous cavities were present, and these prominent symptoms and anæmia came to be regarded as characteristic of beri-beri. This was before

Pekelharing's investigation. Then came the discovery of the *Ankylostoma duodenale* parasite, and it was thought that here was the *vera causa* of berī-berī, more especially as a cachexia in Ceylon (to which the name berī-berī had become attached) was shown by Kynsey to be due to this parasite, and at that time, owing to the discovery of the filaria by the late Surgeon-Major Lewis, and of its history by Manson, it was thought that entozoa were to explain all tropical pathology. The name berī-berī spread to Assam, where the ankylostoma was also found, and it was indiscriminately applied to many cases of kala azar and ankylostomiasis. Unfortunately the name berī-berī persisted, even after the publication of Pekelharing's monograph showing what true berī-berī is.

To turn now to kala azar in Assam. This disease has prevailed for thirty years in the southern portion of that province. It was first recognised in the Gazo hills, and has slowly and surely spread up along the alluvial banks of the Bhramaputra River, devastating and depopulating (literally) as it advanced. In 1889, Surgeon-Major Giles, F.R.C.S. (Eng.), was ordered to investigate this veritable pestilence. He discovered that the parasite (ankylostoma) was present in many of these cases, and concluded that kala azar was an ankylostomiasis, occurring in malarial stricken people. This view seemed to explain much, but it was never accepted by medical men in Assam, and Surgeon-Major Dobson, Civil Surgeon of Dhubri (at which place all coolies imported for labour on the tea-gardens of Assam are collected and medically examined), soon showed that this parasite was present in seventy-seven per cent. of healthy people, Assamese and coolies, recruited from all parts of Bengal and the N.W. Provinces. If its presence in such a percentage was compatible with good health, the worm obviously could not be the cause of a destructive disease like kala azar. Again, in 1896, the Government of India sent up Surgeon-Captain L. Rogers, M.B. (Lond.), F.R.C.S. (Eng.), to make a new investigation and report. This Report is just published, and must be considered a valuable contribution to malarial pathology and history. His opinion is that the old Assam view is correct in part, in that kala azar is

only an intensely severe form of malarial cachexia, and that the parasite ankylostoma has absolutely no share in its causation—in fact, it complicates cases of kala azar only to the extent of six or seven per cent., just as it and many other intestinal worms complicate every disease in Assam; while he shows that the symptoms of kala azar (anæmia, dropsy, œdema of feet and legs, &c., &c.) are absolutely identical with ordinary malarial cachexia, as seen and known in every malarious country. Moreover he has shown that the blood changes (hæmoglobin, white cells, specific gravity, &c.) are exactly like those in malarial cachexia, and are absolutely distinct from those in pure ankylostomiasis; also in every case of kala azar the ordinary well-known plasmodium of malaria is to be found, and no other organism could be discovered in cultures of blood from many cases. He has, therefore, shown that kala azar is distinct from ankylostomiasis, and is only an epidemic communicable form of malarial fever and its resultant cachexia. This at once raised the point of the well-known contagiousness of kala azar. This is a popular belief, which Dr. Rogers' report has established as a fact. It at first sight, however, starts the presumption that kala azar cannot be a purely malarial disease, as we do not usually look upon malarial fevers as being in any way communicable from the sick to the healthy. This fact, however, Dr. Rogers faces boldly. He traces the origin of kala azar to the intense malarial epidemic which prevailed in Lower Bengal from 1863 to 1875, which was almost certainly malarial, and which was shown at the time to be infectious to the same extent and in the same way as Dr. Rogers shows kala azar to certainly be.

He also gives an account of the great epidemic of malarial fever in the Mauritius and Réunion Islands in 1865-6, which had been free of malarial fevers till they were introduced by Indian coolies from affected India. Therefore any arguments against kala azar being an infectious or communicable form of malaria apply equally to the historical epidemics of Lower Bengal and Mauritius in the sixties. Laboratory experiments on the intensification of germs cannot help us, as no one has ever succeeded in cultivating or even seeing the *Plasmodium malariae* outside the blood corpuscles. Analogies in other

diseases are, however, in favour of this view—*e.g.*, *pestis minor* is said to be a mild non-infectious form of plague, and there is good reason to believe that an infectious form of pneumonia exists at times on the north-west frontier of India and in Baluchistan. However, we cannot linger further on this part of our subject. Accepting, therefore, the view that kala azar is distinct from ankylostomiasis, we must note that true ankylostomiasis does also exist in *Upper Assam*, but not in the epidemic and contagious way kala azar exists in the lower parts of that province.

As regards ankylostomiasis, it has been proved that the worm is found in apparently healthy people in many parts of Bengal, North-West Provinces, Malabar and Madras. Its ravages in Ceylon are known from the writings of Kynsey and Hayman Thornhill. In China, Java, Borneo, Brazil, Egypt, at the making of the San Gothard tunnel, and in the West Indies, ankylostomiasis certainly prevailed to such an extent that Dr. Sandwith has described it as “sapping the lives” of the Egyptian peasantry. It is strange, therefore, that it is not more destructive in Assam. Unless, however, from 500 to 1,000 parasites are present for several months in the intestine little or no harm apparently results to the host, but that this parasite is one of the veritable scourges of humanity no one acquainted with its history can deny.

As regards the prevalence of endemic neuritis (*beri-beri*) in India, the confusion which existed has made one sceptical as to the accuracy of cases recorded in statistical returns under that heading. It is probable, however, that true *beri-beri* is far from being so prevalent in India as is commonly supposed. In and around Calcutta it is found chiefly among Chinese carpenters; in Bengal generally it is very rare; in the North-West Provinces and the Punjâb I have never heard of a case. In Madras cases under that name are mentioned in returns; and others, probably true neuritis, have been reported in Burmah (where there is a strong Chinese element in the population). Other cases are to be found among the Lascar sailors of the Indian seaports, and it is this class that furnish the cases of *beri-beri* usually seen in the hospitals of London and Glasgow. Has a case among Lascars or Chinamen ever been met with in the port of Dublin?

One more point about beri-beri, for it has been a fertile source of confusion—that is, that anæmia is neither a prominent nor a necessary symptom of endemic neuritis.

A word on the differential diagnosis. In beri-beri (endemic neuritis) we must look for the characteristic cardiac and nerve symptoms and the reaction of degeneration; in ankylostomiasis (parasitic anæmia) we must search for the worm after the exhibition of thymol, or by microscopic examination of a portion of the excreta for the ova of the parasite. In kala azar (epidemic malarial fever), which is confined to Assam, we have the history of the sure and slow spread, and evidence of its infectiveness. An individual case, apart from its history, is not to be distinguished from ordinary malarial cachexia, just as in the commencement of an influenza outbreak any individual case may be either simple bronchitis or real influenza. It must also be remembered that the co-existence of malarial cachexia with either beri-beri or ankylostomiasis, as very frequently happens in tropical countries, renders an exact diagnosis sometimes difficult, and it is this fact which, in countries where malaria is very common, has stood so much in the way of clear ideas on the above diseases. To what an extent this confusion has existed the article on beri-beri in Quain's Dictionary of Medicine is proof.

ART. XX.—*What is the Best Method of Treating Syphilis?*

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IN the following paper I endeavour to give an answer to the question: What is the best method of treating syphilis? The subject is common-place. But when we consider the evils which syphilis is causing in the world, when we consider the large proportion of the manhood and even of the womanhood and childhood of our great cities which is tainted by this fell disease, it will be admitted that the subject is one of the highest importance.

Some of the ideas contained in the first part of this essay I have already published; but a large experience has since so convinced me of their truth and value that I make no apology for prefixing them to the present paper.

In the first place I am taking it for granted that in the absence of the as yet undiscovered but inevitable antitoxin, mercury in some form or other is the proper drug to be administered in primary and secondary syphilis.

The question then arises, What is the best preparation of mercury to be given in these circumstances? Since each of the numerous preparations of mercury is believed to be of more or less benefit in syphilis, and since the only constant factor in these various preparations is the metal itself, it follows that it is the metal itself which is the curative agent, and not any of the substances with which it is combined.

This fact suggests the answer that the best preparations of mercury are those which in safe, unirritating doses contain the largest quantity of the metal; for if mercury be the enemy of the syphilitic virus it is inconceivable that the very small quantity of the metal contained in a safe dose of a preparation like corrosive sublimate can be as efficient as the comparatively large quantity contained in an ordinary dose of a preparation like the hydrarg. cum cretâ.

But the advantage of preparations containing a large quantity of the metal is not merely a matter of theory, but is proved by the test of experience; for one of the most convincing proofs of the value of mercury in syphilis is its rapid and striking influence over infantile syphilis. Now, in this form of syphilis the hydrarg. cum cretâ is the preparation most generally given, and its rapid effect is, I contend, due to the large quantity of the metal circulating in the small body of the infant. Moreover, I have seen patients progress but slowly, or not at all, while taking corrosive sublimate, and who improved rapidly when put on a course of mercury with chalk. Again, I have seen three cases of severe syphilitic iritis develop while patients were taking corrosive sublimate, and I have seen again and again grave tertiary lesions follow even a prolonged course of preparations containing a small quantity of the metal. But I have never seen such after a prolonged course of preparations like mercury with chalk or blue pill.

Corrosive sublimate, which is so frequently given in syphilis, is, I believe, the least efficient form in which to administer mercury internally, for not only does it contain in a safe dose an exceedingly small quantity of the metal, but even

this small quantity frequently fails to reach the patient, for when given, as it frequently is, in solution in ordinary water containing lime-salts, it is liable to decompose, the mercury becoming precipitated at the sides or bottom of the containing vessel.

Theoretical considerations, then, as well as practical experience, point to preparations containing a large quantity of the metal as the best for administration in syphilis. And of these preparations the hydrarg. cum cretâ is at once the least irritating and the most convenient. Blue pill is also a good preparation.

But while I hold that it is of advantage to have a large quantity of mercury circulating through the tissues of the patient, the quantity must not be so large as to produce salivation, purgation, or any other injurious effects; for when the struggling tissues are injured by mercury or by any other cause, then the enemy triumphs, and the worst forms of syphilis may ensue.

It will be seen that the view which I am advocating as to the best method of treating primary and secondary syphilis—namely, *maximal doses, short of mercurialism, of preparations of mercury containing large quantities of the metal*—is a compromise between the old school, which did harm with excessive doses, and a modern school which believes in minimal doses.

I may here, perhaps, mention that my experience gives me reason to believe that milk or other albuminous food, given at the same times as the mercury, interferes with its action. This I would explain by assuming that albuminate of mercury is formed before the mercury gets into the blood or tissues, and that consequently the mercury is no longer free to unite with and destroy the syphilitic virus or its toxin.

The treatment of syphilis should be carried out for a prolonged period. For mild cases, in young vigorous adults, for *not less* than six or seven months; and for more severe cases, or in patients above 38 or 40, it would be well to prolong it for at least a year. In most cases the maximal doses may, with advantage, be lessened after the first few months. The administration of mercury should, of course, be combined with the avoidance of alcoholic excesses and of everything calculated to lower the vitality of the patient.

In tertiary syphilis the value of large doses of iodide of potassium is undoubted and needs no discussion. But on the question whether mercury should also be given in addition to the iodide of potassium, the profession is by no means unanimous.

I hold that mercury should also be given, and for the following reasons:—In the first place, although it is of course impossible to measure the exact amount of benefit derived from giving mercury in addition to the iodide, nevertheless I have a distinct impression that when mercury is added the cure is more rapid and more permanent, and there are many great authorities like the late Dr. Bristowe who have the same impression; in the second place because in all probability the syphilitic virus is present in the tertiary stage as well as in the earlier stages, although localised to the seat of lesion.

This opinion that the virus of syphilis is present in tertiary lesions I found on the fact that we know no other disease where there is a pathological process at all comparable to the lesions of tertiary syphilis, and where the virus of the disease is not also present. Take, for instance, the “infective granulomata,” no one pretends that the organisms which cause leprosy, farcy, actinomycosis or tubercle, are not present at least in spore form in the late manifestations of these diseases. It may, perhaps, be objected that no specific organism, or organism suspected of being specific, has been found in the late lesions of syphilis. But this does not prove its absence. In the caseous masses of old tubercle the bacillus tuberculosis is seldom if ever found; yet that the organism is present either in the form of spores, or in some old-age form unrecognisable by present methods, is proved by inoculation experiments.

As illustrating how organisms may sometimes get converted into forms not easily recognised, I may mention Pfeiffer's experiments, showing the transformation of the cholera vibrios into oval-shaped bodies.

Again, it may be objected that tertiary syphilis is not infective. This is an assumption of which there is no proof. If the virus be localised to the lesion and there be no ulceration, and especially if it be only the toxin of the virus which

is present, tertiary syphilis cannot well be infective, and certainly cannot be so infective as secondary syphilis, where every drop of blood and probably every particle of living tissue contains the poison. But an ulcerating tertiary lesion may very well be infective, and probably is so, if we may judge from the analogy of leprosy, where, in the words of the late South African Commission, "ulceration is a measure of the danger of contagion."

But even should tertiary syphilis be subsequently proved not to be infective, this would only point to the absence of the infective organism, and would not exclude the presence of its toxin; and as we do not know whether the curative effect of mercury is due to its action on the living germ or on its toxin, mercury is therefore indicated in tertiary syphilis, whether tertiary syphilis is infective or not.

THE "LARYNGOSCOPE."

WE understand that Messrs. John Wright and Co., of Bristol, have undertaken to publish a European edition of this periodical, commencing with the new year. It will be issued simultaneously with the American edition. The "Laryngoscope" is now the official organ of the laryngological section of the New York Academy of Medicine, of the southern section of the American Laryngological Rhinological and Otological Society, and of the Western Otological Laryngological and Rhinological Association. It is a monthly journal devoted to diseases of the nose, throat, and ear, published in extra large octavo sheets, 64 pages each month. It costs only a shilling a month, or ten shillings per annum. The new publishers, Messrs. Wright and Co., will be glad to receive names of intending subscribers, either at their Bristol address or through Messrs. Simpkin, Marshall, Hamilton, Kent and Co., of London.

BEEF TEA.

THE popularity of the oldest established of the beef tea preparations is strikingly exemplified by the fact that the Liebig Company's sales of their J. v. Liebig Extract during October have beaten all records since the formation of the Company more than thirty years ago; and we understand that this is not due to any unusual pushing in the way of trade bonuses, but simply in the ordinary course of business.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON CLINICAL MEDICINE.

- I. *The Student's Guide to Medical Diagnosis.* By SAMUEL FENWICK, M.D., F.R.C.P., Consulting Physician to the London Hospital; and W. SOLTAU FENWICK, M.D., Physician to the London Temperance Hospital. Eighth Edition. London: J. & A. Churchill. 1897. Pp. 468.
- II. *Clinical Methods: a Guide to the Practical Study of Medicine.* By ROBERT HUTCHISON, M.D., Demonstrator in Physiology, London Hospital Medical College; and HARRY RAINY, F.R.C.P. Ed., University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh. With 137 Illustrations, and 8 Coloured Plates. London: Cassell & Co. 1897. Crown 8vo. Pp. 552.

THESE are both excellent books; they treat of similar subjects, which, however, they approach from diverse points of view. They are intended for the same class of readers, and therefore we have grouped them together for reviewing purposes.

I. To take first the older of the two works, reckoning from the date of its first edition: Dr. Fenwick's Guide was first published in 1869, and has been found so useful that seven editions having been exhausted, the eighth has just been published. It is, however, not so much a new edition as a new work. The changes and advances in many of the methods of clinical investigation have, of recent years, been so extensive and important that nothing less than a re-writing of the book was needed, and we have now much pleasure in bearing witness to the thoroughly modern character of the work. It may be looked upon as a new book. The import-

ance of pathology in modern medicine is fully recognised, and disease is treated from an anatomical and pathological standpoint.

The book is written to help the case-taking student to make a diagnosis of what is amiss with his patients, and to enable him to gain a clear grasp of the nature of their diseases. Thus, in each section—heart, lungs, stomach, &c.—a few characteristic features of each disease are given, in order to establish the diagnosis, and then its various phenomena are described and explained at greater length.

Thus, in the section on the lungs—first, the pathological nature of the various lung diseases is explained, the modes of physical examination are described, and the normal and abnormal phenomena to be met with—dulness and resonance, râles and rhonchi, &c.—are fully set forth. Then the acute diseases of the lungs are enumerated, and are first divided into two classes—those in which the student finds dulness, and those in which this sign is absent. If dulness exists, the disease is either pneumonia, pleural effusion, or hydropneumothorax. The distinguishing features of each of these are then given—first in a few words, and then at greater length—a description of the disease just long enough to contain all the facts necessary for a beginner to know being appended to the diagnostic points. Then the acute diseases without dulness are treated of.

In this way all the systems in the body are taken up in turn. Many tabular statements of diagnostic points are introduced.

There are a good many excellent diagrams, and some photographs of diseased tissues to which we cannot give much praise. We wish the authors had confined themselves to diagrams. We are convinced that a good diagram is far more instructive than any photograph.

We note that a half-inch lens is said to be powerful enough to detect tubercle bacilli in sputum. We would not advise a student to trust to any such lens. There are two absurdly bad woodcuts of the microscopical appearances of inflamed kidneys. In testing urine for albumen by means of boiling we are told to acidify with 10 or 15 drops of nitric acid before boiling—a most undesirable proceeding, as being liable to

create acid albumen not coagulable by heat. The chapter on Skin Diseases is poor, and likely to be of little use. But these are trifling faults after all.

We have formed a very high opinion of this book. We warmly recommend it to all students commencing clinical work. It is difficult for a beginner to read Taylor or Osler, or any of the standard works on medicine, at an early period of his student life; and without a certain amount of reading he cannot do his case-taking intelligently and well. We strongly advise him to provide himself with Dr. Fenwick's Guide, and to read it day by day in connection with his hospital work.

II. Drs. Hutchison and Rainy's book approaches its subject from quite a different standpoint, and is, in the main, a description of physical signs and of methods of making an examination of the patient. And this it does admirably well. Going through the various systems and organs of the body, we find—first, a full description of their normal characters, as evidenced by physical examination, and then a particularly complete account of all morbid phenomena connected therewith.

Take, for example, Chapter IV., on the Circulatory System. We have, first, an account of the topographical anatomy of the heart; then inspection, palpation, percussion, and auscultation of the heart are described in a most complete manner—this section occupying 58 pages, and being illustrated with 25 diagrams. Next, the pulse, and the use of the sphygmograph are thoroughly discussed. Lastly, the clinical examination of the blood is systematically gone through; the instruments devised for these purposes are illustrated and explained; and the modes of fixing and staining the blood are carefully described. There is a coloured plate illustrating normal and abnormal blood.

The other systems of the body are equally well and fully described. The authors do not confine themselves to the principal viscera, but include the eye, ear, nose, and larynx in the scope of their volume, and add a chapter on Bacteriology.

We warmly recommend Drs. Hutchison and Rainy's

book. The student or practitioner will find here all that he needs to know about clinical methods of examination and the significance of the phenomena observed.

Heart Disease: with special reference to Prognosis and Treatment. By SIR WILLIAM H. BROADBENT, Bart., M.D. London, F.R.S., F.R.C.P.; Physician in Ordinary to H.R.H. the Prince of Wales; Consulting Physician to St. Mary's Hospital and the London Fever Hospital; late President of Clinical, Medical, Neurological, and Harveian Societies; and JOHN F. H. BROADBENT, M.A., M.D. (Oxon.), M.R.C.P. London: Baillière, Tindall & Cox. 1897. 8vo. Pp. 331.

THIS work is, for the most part, a reproduction of lectures on "Prognosis in Valvular Disease of the Heart," delivered before the Harveian Society in 1884, and of the Lumleian Lectures on "Prognosis in Structural Diseases of the Heart," delivered before the Royal College of Physicians of London in 1891, by Sir William Broadbent. In the Preface Sir William tells us that the prognosis of heart disease had already engaged his attention when he was house-physician under the late Dr. Sibson at St. Mary's Hospital, and that his first paper on the subject was read before the Harveian Society in 1866.

The subject of treatment has been engrafted upon the lectures on prognosis, and it is here that the joint authorship of Dr. John Broadbent makes itself felt, and is duly acknowledged by his father. "For this, and for the rearrangement rendered necessary by it, I am indebted to my son, Dr. John Broadbent, without whose efficient assistance and co-operation the task of preparing this book could not have been accomplished."

The opening chapter describes the relations of the heart to the chest walls, and contains a brief but satisfactory account of the methods of physical examination to be followed in investigating diseases of the heart and its valves—namely, inspection, palpation, percussion, and auscultation. The first portion of this chapter, dealing with the position and relations of the heart, is taken mainly from the

works of the late Dr. Francis Sibson, of St. Mary's Hospital. Readers will please correct (on page 24) a printer's error of some importance, although obvious, to which the publishers have called our attention. "Reduplication of the second sound is not uncommon, and is due to a synchronous closure of the aortic and pulmonic semilunar valves." Of course "a synchronous" in this sentence should read: "asynchronous." On the same page (24) the diastolic murmur of aortic regurgitation or incompetence is described as being "usually blowing in character." Of all endocardial sounds this diastolic murmur has always struck us as possessing acoustic properties suggestive of its origin in a reflux of fluid. It is a *backwash* murmur, which, to a far greater extent than any other murmur developed inside the heart, conveys the impression that a movement of fluid is undoubtedly its cause. Other murmurs may be variously described as "soft," "blowing," "musical," "harsh," "rasping," and so on, but the diastolic murmur of aortic insufficiency may be called "swashing" or "splashing," in so far as these words represent the sound made by the backward wash of the blood into the left ventricle from the aorta.

In discussing valvular disease in general, in Chapter II., Sir William Broadbent dissents from the order of relative frequency of the several valvular lesions laid down by Walshe. According to Sir William's experience the following should be the order of frequency—mitral regurgitation, mitral constriction, aortic regurgitation, aortic stenosis. Of the combination of two or more lesions, mitral incompetence and stenosis, aortic and mitral regurgitation, aortic incompetence and stenosis, would occupy the first three places. By far the commonest lesion of the valves of the right ventricle is tricuspid incompetence, occurring not as a primary but as a secondary lesion—secondary either to severe valvular disease of the left ventricle, or to lung disease, such as chronic bronchitis, which gives rise to obstruction to the flow of blood through the pulmonary circulation. Other valvular lesions of the right ventricle are comparatively rare, but Sir William would place tricuspid stenosis, which may be associated with mitral stenosis, before pulmonary constriction or regurgitation.

The author's remarks on the information which may be gathered from the pulse as to the nature and extent of a valvular lesion are sound and practical. We are particularly glad to observe that he holds that in all these three forms of valvular lesion—namely, aortic stenosis, aortic incompetence, and mitral stenosis, the pulse is regular till the heart begins to break down. We have often adduced the comparative regularity of the pulse in both volume and rhythm as a diagnostic between mitral stenosis and mitral regurgitation. A sphygmographic tracing, reproduced on page 36, entirely confirms this observation.

Having explained the occurrence of hypertrophy and dilatation of the heart in the different forms of valvular disease, the author proceeds to consider the exact conditions which determine the effusion of serum into the connective tissue in heart disease (cardiac dropsy). He believes that clinical experience is in accord with the view that dropsy in heart disease is the result of obstruction to the return of venous blood to the right side of the heart (page 58). He points out that mitral narrowing is not at all so liable to be followed by general dropsy as insufficiency, the probable explanation being that the diminished output from the left ventricle in stenosis of the mitral valve does not allow of sufficient pressure in the capillaries to give rise to effusion of serum. For a similar reason dropsy is rare in fatty degeneration of the heart. The *vis a tergo* in the arterial circulation, which is necessary for the production of pressure in the capillaries and effusion through their walls, is lacking.

Sir William's views on prognosis are such as one would expect from a man of much common sense, a ripe experience, and a sound judgment. As regards sudden death, he still holds the opinion expressed before the Harveian Society in 1866, that it is "a contingency which may almost be left out of consideration in valvular disease, except in aortic regurgitation" (page 70). At the end of Chapter VII. a series of six different conditions is given in which a prognosis may have to be made in valvular disease. In each case the author discusses the question of prognosis with much ingenuity and acumen.

Chapter VIII., on "Treatment," is excellent reading. In

it the Oertel and Schott methods are described. The paragraph on "Stimulants" is well worth quoting in full—"Strict moderation must be observed in the matter of alcoholic drinks; in comparatively few cases are they necessary, and if taken they should be taken only as part of a substantial meal. Their effects as excitants of the heart may, to some extent, be neutralised by the relaxation of the peripheral vessels which they induce, but their general tendency is to interfere with due metabolism and elimination, and to bring about degeneration of structure" (page 98).

The authors' observations upon digitalis at the beginning of Chapter IX. carry with them conviction. "In most cases," they say, "it will be advisable to give a mercurial purge before its administration, and to repeat this from time to time. In cases where there is high arterial tension, the mercurial purgative is especially important, and it may be well to give with the digitalis spiritus ætheris nitrosi or some vaso-dilator to counteract in some measure the tonic effects of the digitalis on the arterioles and capillaries" (page 113).

In the same chapter the effects of digitalis in each of the principal valvular lesions are discussed with conspicuous ability and conciseness. The following four chapters are devoted to a full consideration of the individual valvular lesions—aortic stenosis (Chapter X.), aortic regurgitation (Chapter XI.), mitral incompetence (Chapter XII.), and mitral stenosis (Chapter XIII.). Then comes a short account, in Chapter XIV., of valvular disease of the right side of the heart.

The remaining topics discussed are—in sequence—congenital malformations of the heart and its valves, adherent pericardium, structural diseases of the cardiac walls leading to hypertrophy or dilatation, structural disease of the right ventricle, fatty degeneration, which is carefully to be distinguished from fatty infiltration of obesity; angina pectoris, functional affections (so-called) of the heart—namely, pain in the præcordial region, palpitation, whether persistent (tachycardia) or temporary and intermittent, and intermittent and irregular action.

An appendix contains a useful note on the preparation of

the baths, and on the movements practised, in the Schott treatment of heart disease.

The "setting" of this book is all that could be desired. Paper, type, and language are unexceptionable. We have met with scarcely any misprints or mis-spellings. "Morbus cœruleus," described at page 215, should be "Morbus cæruleus." "Asynchronous" (page 24) has already been corrected.

The work is one which adequately represents our existing knowledge of heart disease. It deserves and possesses our unreserved commendation.

Influenza, with Special Reference to some Peculiar Symptoms.

By WILLIAM GRAY, M.D., C.M. Ed. London: H. K. Lewis. 1897. Pp. 71.

THIS work contains the careful observations and conclusions derived from several epidemics of influenza. The author approaches the subject in a systematic manner, beginning with the history, nomenclature, &c., of the disease. And here we may call the writer's attention to a curious mistake his printer has made. Among the synonyms, "Tuss's Epidemic" appears in place of "Tussis Epidemica."

With regard to that disputed point—the mode of spread of the disease—the author has no doubt it spreads from person to person, the incubation period varying from fifteen hours to three days. The symptoms are very fully described, and illustrated with the notes of many cases. Dr. Gray has fairly often met with a scarlatiniform rash, differing from that of scarlatina in that the rash comes out simultaneously on all parts of the body; there is no sore throat; and the temperature does not exceed 101°. In cases where some slight cutaneous abrasion had occurred he not unfrequently met with a vesicular eruption—sometimes confined to the neighbourhood of the injury, sometimes generalised. Another symptom noticed was the tendency to uterine hæmorrhage; also the liability of influenza to attack a woman soon after her confinement. "It would be going too far to say that parturition was one of the predisposing causes of influenza, but undoubtedly there is a relationship between the two

conditions that is fairly constant and definite." In the case of women who have had a previous attack of influenza, the attack usually comes on two and a half days after the date of confinement; while with those who have never before suffered, the attack begins five days after parturition. Dr. Gray records cases from a large series of examples of this *post-partum* form of influenza.

With regard to medicinal treatment, Dr. Gray prefers acetate of potassium and phenacetin—10 to 15 grains of the former and 7 grains of the latter, every three or four hours—to any other drug or drugs he has tried.

Rheumatism and its Treatment by the Use of the Percusso-Punctator. By J. BRINDLEY JAMES, M.R.C.S., L.R.C.P.I. Second Edition. London: The Rebman Publishing Co., Ltd. 1897. Pp. 39.

THIS little book is, in some ways, an example of how a book ought *not* to be written. Dr. James describes his "percusso-punctator," which is a short rod, from one end of which a number of needles can be protruded to a greater or lesser distance; it is so arranged that electricity can, if desired, be passed through them. He also mentions a number of cases in which he has used it with astounding results, emphasised by Dr. James with a liberal use of italics. But what we chiefly want to know he tells us nothing about; he gives us no hint to what depth he punctures his patients—does he introduce the needles only through the skin, or does he pierce the muscles also? Does he puncture in several places or only in one? Above all, why does he call his instrument a *percusso-punctator*? Does he employ a mallet to drive it into the patient? To all these questions the book before us gives no answer. We hope that Dr. James may soon be induced to publish a third edition wherein our ignorance may be removed. We are not disposed to find any fault with the method recommended, as we have long known that puncture is often an efficient means of relieving pain; but we think, when an author writes advocating a special treatment, he should give all details of it.

In Chapter V. a new treatment of sciatica and lumbago is

advocated—viz., by the injection into the painful part of from ten to thirty minims of sulphuric ether. The results are said to be surprising, which we can well believe.

The last two chapters are on neurosis in modern life. The world, Dr. James says, is going from bad to worse. "In Europe the crimes of educated men (forgery, poisoning, &c.) hold a larger proportion to coarser forms of crime than of yore. Uneducated anarchists could not have devised murderous explosive engines. It is plain that modern brain-impairment has warped moral perceptions. Disavowal of all social obligations, cynically avowed disbelief in a Deity, disgracing as they do our modern literature, further prove modern neurosis to be supremely epidemic for the nonce." All this the author cures with his percusso-punctator.

Psilosis, or Sprue: its Nature and Treatment; with Observations on Various Forms of Diarrhœa acquired in the Tropics. By GEORGE THIN, M.D. Second and Enlarged Edition. London: J. & A. Churchill. 1897. Pp. 270.

PSILOSIS (*ψιλός*, bare) is the name suggested by Dr. Thin for an affection known already by several more or less cumbersome titles, such as *Gastro-enteritis aphthosa Indica*, and which by the Dutch in the East Indies is called "sprue." The disease seems to be characterised by a tendency towards loss of epithelium and consequent superficial inflammation in various parts of the alimentary canal, especially in the mouth, œsophagus, and small intestine. The symptoms are due to these anatomical changes. Thus, in the mouth we find the patients affected with this disease complaining of tenderness and soreness of the mucous membrane, especially when he tries to swallow anything hot. A herpetic rash may break out at the beginning, and later on the tongue may become red and bare, with deep cracks. Dr. Thin mentions several cases in which patients suffering from this disease consulted eminent physicians in London, by whom, in spite of the patients' denial of the possibility of such a thing, a confident diagnosis of syphilitic disease of the tongue was made, needless to say to the disadvantage of both patient and physician. It, therefore, follows that some knowledge

of this disease is advisable even in these countries. Three excellent coloured plates elucidate the morbid appearances of the tongue and mouth. This semi-raw condition may extend to the œsophagus, causing pain on swallowing.

In the small intestine, and especially in its lower part, similar changes take place, the mucosa being more or less destroyed, while in more chronic cases some thickening of the sub-mucosa is found. The result of this is diarrhœa—the most marked symptom of the disease. This diarrhœa is painless, and is most apt to occur during the morning hours. The stools are pale, unformed, and frothy, and the duration of the diarrhœa is indefinite.

Dr. Thin has had in his practice two fatal cases, in which careful *post-mortem* examinations were made; the morbid anatomy is very carefully explained, and a number of woodcuts show the nature of the microscopic lesions present. Dr. Thin, however, does not content himself with an account of his own cases, but refers very fully to the literature of the pathology of psilosis.

When these symptoms have lasted some time the nutrition becomes profoundly affected; anæmia and emaciation ensue; mental symptoms—depression or excitement—are common; and the disease may ultimately prove fatal, or may persist for years.

Happily, however, treatment is usually successful. It may be summed up in one word—milk. Dr. Thin prefers to give it undiluted and unboiled. He advises that the quantity ordered should be taken between 7 a.m. and 10 p.m., half a pint being slowly drunk at a time. The intervals between the half pints will depend on the amount to be taken—thus, if five pints are to be taken, the half pint is swallowed every hour and a half; if seven pints, every hour; and so on. Sometimes patients can take the milk better when it is aerated in a seltzogene; sometimes when such a bulk of fluid cannot be digested the same nutriment can be given in lesser bulk by evaporating the milk to one half. Full directions are given for the preparation of milk by each of these methods. As regards the needed quantity of milk he begins with three or four pints a day, and increases the quantity gradually. On five pints and under, weight is generally lost. During

the treatment in all severe cases the patient is kept in bed, and the abdomen is kept covered with cotton wool; great care must be taken to avoid chills. Exclusive milk diet should be continued till the motions have been solid for from five to six weeks; then a little bread is allowed, and the dietary gradually enlarged. Relapses are very common, so that the greatest caution is needed.

Full notes of twenty cases are appended, from the perusal of which many details as to treatment, &c., may be learned.

There is one point on which we do not find Dr. Thin very intelligible—namely, what extension he gives to the name Psilosis. Sometimes he confines it to the disease whose leading features, as given by Dr. Thin, we have briefly recapitulated. Elsewhere he extends the name to the diarrhoea alba, or tropical diarrhoea of Indian physicians, which he regards as a quite different disease. To differentiate two diseases and then to give them the same name seems inadvisable.

Dr. Thin's book is well written, and gives an admirably clear account of the disease it treats of. It is written from the standpoint of a man who has considerable practical experience of the matters he mentions, and will be found useful by all those who come in contact with patients who have contracted diarrhoea in tropical countries.

Localization of Headache and Sick Headache. By H. BENDELACK HEWETSON, F.L.S. Pictorially illustrated. London: Simpkin, Marshall & Co., and Leeds: Goodall & Suddick. 1897. Pp. 140.

THE book, which is very well got up, is dedicated to Thomas Clifford Allbutt, M.D. In his preface the author states that it has been his intention in this monograph to show that a large number of headaches, accompanied by nausea or actual vomiting, with vertigo and great prostration, which come under the head of sick headache in ordinary terms, are simply a series of neurotic disturbances, and are themselves symptoms of some form of ophthalmic disorder, usually associated with astigmatism.

It is well known that ordinary sick headache is present

occasionally in persons who have no defect in their vision; but from his experience he is inclined to suggest that defective vision is by far the most frequent cause of this distressing ailment, and that in the majority of cases it will be found that a complete investigation of the optical state of both eyes, under the influence of atropin, will show that glasses are required.

Out of 13 cases of sick headache which he reports as being cured by the systematic use of glasses, 12 were astigmatic.

Chapter I. concerns itself with the relation between sick headaches and defective sight, chiefly astigmatic, and their pathology and treatment by glasses.

Chapter II. deals with the subject of general neurosis having an ophthalmic origin.

Chapter III. is an attempt to map out the regions of pain in the head, indicative of each variety of cause; then follow fifteen diagrams illustrating pains in the head arising from defects of the eyes only. Five diagrams showing pain in the head and about the eyes, arising from the combined irritation of defective eyes and carious teeth; six diagrams showing the connection between disorders of the naso-pharynx and frontal sinus, and various head-pains; and two diagrams showing pains arising from, or reflected to, the ears.

A Manual of Gynæcology. By D. BERRY HART, M.D., and FREELAND BARBOUR, M.D. Fifth Edition. Edinburgh and London: W. & A. K. Johnston. 1897. Demy 8vo. Pp. 743.

HART AND BARBOUR'S *Gynæcology* has, since its publication in 1882, held a foremost place amongst works of its kind. At one time, indeed, it may be said to have occupied an unrivalled position amongst British gynæcologies. Now, however, this enviable position is contested by a formidable list of excellent publications.

It is, therefore, of interest to observe in what manner this, the present, edition may be said to equal or rival its contemporaries.

The introductory chapters—those dealing with anatomy—are really the most distinctive features of the book, and of themselves suffice to make the work one of considerable value.

Dr. Hart, who has written much on pelvic anatomy, relies on his now well-known frozen sections to demonstrate the accuracy of his teaching, and these, no doubt, are in the main correct; but until we are informed as to whether these sections are typical of a number of subjects examined, and not merely all obtained from one and the same body, we can by no means accept them as conclusive evidence of anatomical accuracy.

It is much to be regretted that the description of the nervous supply to the uterus cannot be said to be any more complete than that afforded in other gynæcological manuals.

A good feature in the book is the excellent index of authorities, which, placed at the head of each chapter, is calculated to enormously facilitate the labours of those desirous of more fully studying any individual section.

The description afforded of the methods by which the physical examination is performed compares very favourably with other works. Schroeder's chair and the method of bimanual examination receive the prominence they deserve.

On the other hand, a long account dealing with the passage of the uterine sound by touch, not sight, might have been, with advantage, much curtailed, as at best it is a dangerously septic proceeding.

Nor do we think the advice to oil a sound before its introduction is safe in practice, and we do not believe with the authors that in any way it can prevent the onset of uterine inflammation.

The prominence given to sponge tent dilatation is, to say the least of it, unfortunate—more especially as the authors elsewhere show that they are by no means enamoured of the method of dilatation by these highly dangerous instruments.

An article headed "Anæsthesia" is entirely devoted to the praise of chloroform as administered in Edinburgh, and suggests an unconquerable patriotism, rather than a broad and cosmopolitan grasp of the subject, which is usually considered an advantage in books dealing with scientific topics.

A short but readable account of micro-organisms, with means to compass their destruction, follows, and then we are brought over the familiar ground of para- and perimetritis with many other gynæcological complaints which, for the most part, do not admit of any individuality in a book of this kind.

As gynæcology is almost entirely surgical in its methods, we turn to the operative portion of the work with a feeling that our readers will form their opinion as to the practical usefulness of this manual by the excellence of these sections.

The authors have re-written many of these chapters, and brought them fairly up to date. Thus panhysterectomy, colpotomy, and morcellement by Doyen's method, all receive due notice.

It is strange to find external fixation of the stump and hysterectomy by Schroeder's method still discussed and contrasted one with the other, and to note that the authors, still believing that they stand out as rivals to the more modern operations, the true fact being that surgeons have long since discarded both one and the other proceedings, having weighed them in the balance and found them wanting.

The Diseases of Women. By J. BLAND SUTTON, F.R.C.S. Eng., and ARTHUR E. GILES, M.D., B.Sc. Lond., F.R.C.S. Edin. London: The Rebman Publishing Company, Ltd. 1897. Demy 8vo. Pp. 422.

It was with considerable interest we undertook the perusal of this book, for surely a work of its size is a distinct want in gynæcological literature, and the fact that the name of Bland Sutton was associated with it gave a prospect that at length a short student's manual of high excellence had been produced.

It is, therefore, with much regret that we find our preconceived notions somewhat modified by having read it, as the book, we feel sure, has fallen far short of the high expectations that could not fail to have been entertained of it.

The publishers may be congratulated on the thorough manner in which their part of the work has been accomplished, thereby giving us one more example of artistic excellence in medical books.

Those already conversant with Dr. Sutton's published works will be struck with the marked resemblance this bears to those which have gone before, and it seems to us as though he need only have permitted his former publications to be freely transcribed in order that the greater portion of the present volume might see the light.

The authors claim in the Preface that their earnest desire is that it may “enable students to practise this important department of surgery with credit to themselves,” and it is precisely this claim as to the practical efficiency of the book with which we find fault, for it inadequately deals with symptoms, diagnosis, and treatment.

It would serve no useful purpose to bring our readers chapter by chapter through the book ; instead of this a couple of what may be regarded as typical sections in the work will be dealt with.

Lacerated perinæum is a subject the true understanding of which is usually considered of the utmost importance, as affording a starting point for many of the gravest after-results. Thus, in Thomas’ and Mundi’s *Gynæcology*, a list of eleven complications is recorded as being often directly traceable to this accident, and no one reading this list will, we think, gainsay its accuracy.

In the present work, on the other hand, the consequences of complete rupture are enumerated as follows :—“Tendency to prolapse of the vaginal wall, which may be followed by a more complete hernia. Diminution of rectal control, causing incontinence of fæces and flatus. The latter symptoms are wanting in incomplete tear.”

Could any information be more scrappy, or less calculated to turn out an efficient practitioner than this ?

Nor is it even accurate so far as it goes. Complete laceration is not always attended with incontinence of fæces, nor is it usually followed by either prolapse of the vaginal wall or hernia, in this respect differing markedly from an incomplete tear. As regards treatment, too, there is much to find fault with. One operation alone is described—the flap-splitting method, closely associated with the name of Lawson Tait.

But what a caricature on the original operation !—with plates after Fancourt Barnes calculated to lead the uninformed to believe that the world is indebted to the latter surgeon for it, and all mention of Tait deferred until the end of the article, when it is noted that the principle of the operation was introduced by him.

Could any description of Tait’s great operation be more unworthy than this ? and he certainly has every reason to

resent the effort to modify his plans by the employment of shotted sutures.

In turning to the section dealing with ovarian tumours, we find much to note of a sufficiently unsatisfactory nature; thus—"In a general way it may be stated that it is impossible to accurately diagnose between the various forms of tubal and the following forms of ovarian disease:—

"1. Tubercular abscess of ovary.

"2. Apoplexy of the ovary.

"3. Small ovarian cysts and tumours, &c."

And again—"The recognition of a large uncomplicated ovarian cyst is one of the simplest processes in clinical surgery."

It would be interesting to know how many modern gynæcologists share these views with the authors, for surely a greater contradiction of facts it is difficult to conceive.

To diagnosticate a small ovarian tumour, and to distinguish it from tubal disease, is a feat that any educated surgeon need not feel any particular pride in accomplishing. On the other hand, the presence of a large ovarian cyst will often cause experienced operators to make but a guarded diagnosis.

It is, moreover, curious the one diagnostic sign—*i.e.*, the palpation of the pedicle through the vagina or rectum—which often alone serves to discriminate these tumours from cystic kidneys, spleens, myomata, or encysted peritonitis, is altogether ignored in the present work.

These examples, which by no means exhaust our list of objections, will serve, we think, to justify the adverse opinion we have been compelled to form of this work.

The most we can say in its praise is that it is written in a most readable style, and will afford a student a smattering of gynæcology sufficient, in all probability, to enable him to cut a respectable figure in any ordinary examination.

Lawson Tait's Perineal Operations. By W. J. STEWART M'KAY, M.B., &c. London: Baillière, Tindall and Cox. 1897. Demy 8vo. Pp. 69.

THIS little book has been written with the consent of Mr. Lawson Tait, who contributes his views on this subject in a

short Preface, and we believe it contains at once the most accurate and fullest account of the operation perineorrhaphy, as performed in Birmingham.

The work, under these circumstances, is a timely addition to the science and art of gynæcology, and we recommend it for the perusal, not alone of operating surgeons, but also to the writers of students' manuals.

We can also assure our readers that the operation, as described here, is infinitely more simple and efficient than the many spurious imitations known as "Modified Tait's."

A Pictorial Atlas of Skin Diseases and Syphilitic Affections.

Edited and annotated by J. J. PRINGLE, M.B., F.R.C.P.
Part XII. London: The Rebman Publishing Company,
Ltd. 1897.

THE insertion of a full Index in this, the twelfth, part of Dr. Pringle's "Pictorial Atlas" points to the completion of the work. We have repeatedly expressed our high opinion of its merits, and it only remains for us to congratulate the editor and the publishers on the very successful manner in which they have discharged their respective functions in regard to the bringing out of the Atlas.

The present part contains five plates of photo-lithochromes. They are numbered from 46 to 50, so that the whole Atlas consists of 50 plates. The subjects illustrated are—syphilitic chancre of the nostril (hypertrophic form), syphilitic chancre of the tonsil (diphtheroid form), both patients having been under the care of Professor Alfred Fournier, at the Saint Louis Hospital, Paris; xeroderma pigmentosum (R. Du Castel); impetigo contagiosa (Lucien Jacquet); urticaria pigmentosa, with atrophic spots arranged in transverse bands (H. Hallopeau); syphilitic chancre of the lip, in the scabbed and erosive forms, and syphilitic chancre of the tongue, ulcerative form (Alfred Fournier).

Probably the most interesting of the whole series of illustrations in the twelfth part of the Atlas is that of Baretta's model of urticaria pigmentosa, an "affection which was first observed in 1869 by Nettleship at the Blackfriars Hospital,

London, and to which Sangster, in 1878, gave the somewhat unsatisfactory name by which it is known."

On page 279, we find a valuable note by Dr. Pringle on the nomenclature of skin diseases. He writes: "The feminine-substantive *Xerodermia* is more accurate than the neuter *Xeroderma*, as conveying the idea of a *state* of dryness of the skin, rather [than] a mere dry skin. The same remark applies to the nomenclature of other skin affections—*e.g.*, *sclerodermia*."

The letterpress of the whole Atlas runs to 302 large folio pages. We may remind intending purchasers that each part costs half a guinea—a sum which cannot be regarded as excessive considering the excellence of the work.

Transactions of the American Orthopædic Association.
Tenth Session. Vol. IX. 1896.

THESE Transactions are well bound, printed and illustrated. The most interesting contents are:—The President's Address on the "Scope of Orthopædic Surgery;" "Potts' Disease;" "Mobility of the Normal Spine in Recumbency;" "Lateral Curvature" (several papers); "Roentgen-Ray Skiagraphs;" "Abscess in High Dorsal Caries." Many of these papers are of value. That on the Apparatus for Potts' Disease is especially good. The photographs are excellent.

Sick-room Cookery and Hospital Diet, with Special Recipes for Convalescent and Diabetic Patients. By MAUDE EARLE, Staff-Teacher of the National Training School of Cookery, London; Lecturer on Sick-room Cookery. With Notes on the Feeding of Infants. By FRANK MADDEN, F.R.C.S.; Medical Superintendent of the Hospital for Sick Children, Great Ormond-street.

IN this excellent guide for nurses and for domestic use the opening chapters are devoted to the classification of foods, their value for sustenance and repair, the effects of the various methods of cooking, and scales of diet suitable during many illnesses and in old age. The diabetic becomes an

object of envy. Among the exhaustive lessons on invalid cookery we find all the new processes for extracting nourishment in concentrated form, and for peptonising food where necessary, followed by a complete *répertoire* of dainty dishes for convalescents. We strongly recommend the work, not only for the sick room, but to young housekeepers, as a general cookery book, supplying a real want where the family is small and nicety appreciated. Full directions are given for soups, fish, entrées (in delightful variety), vegetables, game, sweets, cakes, puddings, and sauces. In addition to this, the lessons in nursing will prove of great practical value to the uninitiated.

Hygiene and Public Health. By LOUIS C. PARKES, M.D., D.P.H. Lond. Univ.; Fellow of the Sanitary Institute, and Member of the Board of Examiners; Lecturer on Public Health at St. George's Hospital Medical School; Medical Officer of Health and Public Analyst for the Parish of Chelsea. Fifth Edition, with illustrations. London: H. K. Lewis. "Practical Series." 1897. Crown 8vo. Pp. 551.

ON more than one occasion it has been our pleasing duty to speak well of this useful and successful handbook. The present, or fifth, edition has been revised and, to a slight extent, enlarged when it has been necessary, in order to keep abreast of advancing knowledge. For example, clear information is given at page 434 about antitoxins and immunity. In the index Dr. Parkes coins a plural of "virus," which is certainly wrong, for "virus" is neuter, not masculine, and occurs, so far as we know, only in the singular number. The word "viri" means "men" or "heroes," not "poisons."

There is no mention of the Report of the Royal Commission on Vaccination, which is, perhaps, all for the best.

We have again to express the opinion that Dr. Parkes has written a readable, meritorious, and reliable text-book on hygiene.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

The Army Medical Service.^a By SIR WILLIAM THOMSON, M.D. ;
President of the Royal College of Surgeons in Ireland.

IN inaugurating to-day the winter session of your studies I have to repeat on behalf of the Council, the Professors, and myself our most cordial welcome. If these words are trite, I ask you to believe that they are very sincere ; for to us who are your seniors it is always a pleasant duty to meet generation after generation of our younger fellow-students who are setting out upon the path which we, too, have trod.

Days like this may tell us that we are growing older, which is not a pleasant reflection ; but they bring back to us the memory that we, too, had a beginning of study as you have ; that we were filled with all the hopes and legitimate ambitions which I trust inspire you ; and that we made our youthful resolves, as I beg of you to make them to-day, to strive with all our might to do our duty in the world.

The school which you have joined is one to which you may well be proud to belong. It has had a long and illustrious life. Out of these halls have passed crowds of men who have gone into all the corners of the earth doing credit to the fair name of their country, and upholding, as the phrase of the declaration of our licentiates goes, "the honour and dignity of our College." Among many others there occur to me at this moment three or four who have become exceptionally distinguished. One is our countryman, Sir William MacCormac, who at the present moment fills the Presidential Chair of the Royal College of Surgeons in England, and on whom her Majesty has recently conferred a baronetcy—a man known the world over for his splendid attainments. In Australia, Sir Thomas N. Fitzgerald, the leading surgeon of Melbourne, stands alone in that country as the first

^a An Address delivered to the Students at the opening of the Schools of the Royal College of Surgeons in Ireland, on Monday, November 1st, 1897.

medical recipient of a royal distinction. In India the principal medical officer of the army is Surgeon-General Gore, whom so many of us know and value so highly; and in Ireland to-day the Army Medical Department is presided over by our friend, Surgeon-Major-General Preston, who, like his comrade, bears honourable wounds received on the field of battle.

The school to-day is, I am glad to say, full of the energy and vigour which are so necessary to success, and I am very sure that if you will only take advantage of your opportunities there are open to you all the rewards which are to be earned by absolute devotion to the work of your profession.

But let me say that this school has not a monopoly of excellence. The other medical schools of Dublin and of Ireland at large are all animated by the same desire to excel—to turn out the student fully prepared for the labour of his life. Whatever rivalry exists is not a parochial one. I trust we all cling to the school in which we were taught. We like to revert to our associations with it, to watch the career of our companions of those days, and to rejoice when we see some new glory added to its name. I do not care much for the man who, without some very special cause, does not stand up for his school or college or university. I like him to think it the best. I like to know that his young and generous affections have fastened themselves upon the place where his early thoughts began to develop and were shaped for the career which he has chosen. Therefore I hope you will stick up for your school. But I should like you to remember that for the outside world there is even a higher ground upon which you may stand. You may belong to this College or that University, but you are students above all of the Irish Medical School, and in that fact you may well find a power to evoke your pride. It has a record which is one of the brightest of this land, and it has helped in no small degree in the past, as it does now, to create and to mould the modern teaching of medicine and surgery. I congratulate you on belonging to it, and on holding the belief that you can find at home teachers as zealous and as learned as are to be found in any other part of the whole kingdom.

Last year when I had the honour of addressing you from this chair I endeavoured to impress upon you the advantages which members of our profession must derive from a liberal education, and I tried to interest you in the cultivation of general literature as a relaxation from the severer work in which you will be engaged. To-day I intend to occupy a short time in dealing with

one or two matters which more nearly affect the actual study in which you are embarked.

I think I may assume that all of you have already begun to think of what you will do when you have passed your final examination. Some of you will probably pass into the struggle of civil practice, with its great possibilities and great uncertainties. Some of you look forward to the public services, which have the advantage, at all events, of security of income, with a fair share of honours. You cannot, therefore, fail to be interested in the agitation, which seems to arise with almost rhythmical regularity, concerning the Army Medical Service.

You are, of course, aware that at the examinations held in August last candidates to fill 36 places were advertised for, and that only 22 presented themselves, and that in February last there were 35 vacancies, and only 26 candidates, of whom but 13 qualified to enter the Service. In the two preceding competitions practically the same state of things existed. The result is that at the present moment there are over 80 places vacant—places which cannot be filled. That is a very startling fact, because in some respects the Army Medical Service offers a splendid career to a young surgeon. It has its risks, of course, but a man who enters it must accept them, and we know that they have not in former times prevented some of the best of our licentiates from joining. In a monetary sense it far exceeds the combatant branches. In addition to better pay it is possible for a man to leave the Service after 20 years with a pension of a pound a day, and so on in proportion to time. Compared with the ordinary results in civil life this is a very exceptional position; and, therefore, the dissatisfaction which has led up to this abstention of candidates must be of a serious character.

Several Commissions have sat to take evidence as to these grievances, and warrant after warrant has been issued yielding certain claims. But a number still remain unsatisfied. I do not propose to occupy your attention with these in detail, but I will shortly refer to one or two that stand pre-eminent.

The primary grievance is a question of rank, and here we find the views of the combatants and the surgeons directly at variance. The medical officers declare that although they are styled surgeon-captains, and surgeon-majors, and so on, these titles give them no real rank whatever in their relation to other officers and men of the army, and that they are constantly subjected to humiliations which make their position unbearable. The rank is a departmental rank—that is, they are surgeon-captains within their own department—and it is alleged that the other officers make this

difference felt in such a way that the example set is followed by the rank and file. Indeed, at the Camperdown Commission of 1890 one very distinguished general officer said he addressed the head of the Army Medical Department as "W. MacKinnon, Esq., C.B., Director-General Army Medical Staff," although the title to which that gentleman was entitled was "Surgeon-General MacKinnon," and he was marked in the Army List as "ranking as Major-General."

Now, it may be supposed that the army surgeons have only to do with the sick in hospital, and the wounded on the field. But they have actual military duties to perform. They have under their direction a body known as the Medical Staff Corps, which is composed of bearers and male nurses, and, generally, of the men who aid in rescuing the wounded, and carrying all the equipment of hospitals on the field. These men are drilled by medical officers and marched into action by medical officers. The position of civilian Mr. John Smith, Surgeon, then, in command of a disciplined bearer company would thus be rather an anomalous one.

The case on the opposite side is that medical men in the army have only rank in their own department, and that to give them real rank in the army, or to call them after the form of "Captain Smith, Surgeon," would be to place them in a ridiculous position. It has been even unwisely alleged that if this plan were adopted a case might occur in which a medical officer would take the command of the combatants in the event of the officers above him being disabled. As a matter of fact, such a thing has happened when all the combatant officers were wounded, and you will be glad to hear that the surgeon—an Irishman, and a Fellow of this College—led his men to victory, and was promoted for it. But no one has ever made such an absurd claim as that of combatant command. Moreover, in other corps, officers who are given rank have what is called limited command—that is, only over the men in the special body to which they belong. Therefore, there is no force whatever in the objection to which I allude, and it appears to have been made without knowledge of the laws of the Service.

But we have examples in other countries of how the system works. If we take Switzerland, we find a citizen army which is turned out every year for a month's training. It is put on war footing to carry out the manœuvres. I am assured that there are many things in that army which we might copy with advantage. But there we find the private practitioner summoned to his duty as a military surgeon. He at once becomes captain or colonel, as the case may be, and, after his labours are over, he reverts to his old position, and assumes his civilian title once more. His

distinguishing mark on the field is the Geneva Cross on his arm, and no one thinks of his being mistaken for a combatant. But it may be further stated on behalf of the army surgeons that they are the only officers who are denied the simple title of their rank. The Captain of Engineers is not called Engineer-Captain, but Captain, Royal Engineers. Nor do we hear of Paymaster-Colonel, or of Army-Service-Corps-Major. The officers of the Army Service Corps are now majors, captains, lieutenants, and the same titles are extended to the Pay Department and to some army schoolmasters. There are no prefixes to dilute the rank.

As to the Pay Department, the answer is made that the officers have already attained rank as combatants. That I admit. But I reply that they have resigned their positions as combatants and can never go back. They have passed into a branch which is purely civil; they certainly have not to discharge their duties under fire; but still they continue not only to hold these titles, but to pass on step by step until they receive the title of Colonel. It is true also that some of these are honorary only, but they have a distinct social significance, and they serve to show that there is a liberality in the extension of these advantages to other departments which is refused in the case of the Medical Department.

Let me say at once that I am trying to bring before you some points in the case made by the medical officers. I see certain difficulties in the way. But then I must remember that we are looking at the whole matter from a standpoint outside the army. We cannot understand the thousand and one matters which cause friction as do the men who spend their lives in the Service. All we can say is that more than three-fourths of the medical officers claim army instead of departmental rank; that they are in the best position to judge of the importance of this concession; and that the solutions of the difficulty which they propose are based upon experience.

A second claim which is made is that the whole of the Medical Service should be converted into a Royal Corps. The arrangement which at present exists is a curious one. The surgeons form a body which is called officially the Army Medical Staff. All the men who constitute the bearer companies, and male nurses, and who are concerned in general hospital work, whether in the field or at stations, are called the Medical Staff Corps. In other words, the officers are in one group, and the men are in another, and they do not even wear the same uniform. If this plan were carried out throughout the army we should have an extraordinary condition of things, for the combatant officers would be nominally separated from the soldiers whom they had to command in action. The

necessity of having the whole medical apparatus—if I may so call it—of the army formed into one body is obvious.

In these days the succour of the wounded is one of the most important obligations which attach to the General conducting a campaign. Organisation and a perfect technique are indispensable if the maimed are to be rescued quickly and successfully treated. The men who have to do this work should be under the sole direction of officers whose training fit them for that position. For really efficient work it is essential that these two bodies should be formed into what is known as a unit. In this way the men know their officers, and the officers their men. In a united corps the surgeons would soon judge the quality of their subordinates, their proficiency, how far they could be relied upon in difficulty, and all the advantages which arise from the daily contact of commander and men.

If such a body existed it would be possible to improve the internal defects which now exist in the Medical Department itself, and to place it on a higher level of efficiency by a system of continued professional education. But at present the officers and the men are in two separate groups. They are moved about independently of each other, and when an emergency arises so many medical items are suddenly thrown together to settle down as best they may. It is very much as if in the case of a battery of artillery a number of officers, gunners, and drivers who had never met before were sent to take charge of guns that they had never fired, and horses they had never ridden, and were bundled into action at once. If this strange separation is good, why does it not prevail in the Royal Engineers or other departments? But it would be destructive of that pride which every soldier feels in the branch to which he belongs. The medical officer, then, naturally anxious that his department should be kept at the highest standard of efficiency, asks to have the present system of dual bodies abolished, and by the creation of a Royal Medical Corps to establish that cohesion and *esprit* which unity alone will give.

There are other matters of perhaps smaller importance which I will not discuss, but in their aggregate they have served to create a discontent among army medical officers which has culminated in the present condition. I know that the combatant branches of the army declare that they wish to have good surgeons, and that they would be glad to remove any causes of complaint. But they are unanimous on the question of rank, and they will not yield upon that point. I have said already that we are only outsiders; but I think we are able to say from what we see that that demand is crucial. Whatever is done, the rank which is given to the medi-

call officers must not be a mere departmental name, but a real rank, which will secure them from the petty indignities to which their position subjects them. The present rank means nothing, and the medical officers have learned to understand that they are only civilians in the eye of the army. Nothing, I think, could have been more unfortunate than the application of this term. It has been made free use of, and it has served to establish many in their hostility to the medical officers. But are they civilians? They hold commissions in her Majesty's army; they wear a uniform, and carry arms; and in an army they are placed in charge of the thousands of armed men and the transport which go to make up a hospital train. In action they are with the fighting line. Of necessity they are where the fire is heaviest, for their duty is to relieve the wounded on the spot where they fall, and for this reason you will realise why it is that the death-rate of army medical men is nearly twice as great as that of the combatant officers. I looked into the Army List the other day and I found that nearly twenty surgeons who are actually serving, or are alive and retired, have won the Victoria Cross. And I noted also that they are called "military recipients" of this splendid reward "for valour" in battle. If they are "military" they are not "civilian."

I press my argument further by pointing out that no civilian can win the decoration. The Victoria Cross warrant expressly declares that the Cross is for the naval and military services only, and that no "other circumstances or condition whatsoever save the merit of conspicuous bravery shall be held to establish a sufficient claim to the honour." What, then, becomes of the allegation that army medical officers are only civilians? They are not only in the army, but they are of the army. Every circumstance of their official lives proves it, and there will be no contentment until that fact is established by warrant beyond all cavil. I have brought these matters before you so that you may understand some of the reasons of the outcry which is raised against the Army Medical Service. Even with these drawbacks many will find it to their interest to go forward for appointments. I by no means blame them. The competition of life is very keen, and I do not advise anyone to hold back. Perhaps I shall be condemned for this statement, but who, I ask, will provide an equally secure position for the young men who follow counsels of another kind? I know of none; and it seems to be asking too much of our students to stand back, and thereby perhaps sacrifice a life's career. Each knows his own necessities and desires.

We will do all in our power, as we have done, to help forward army medical reforms; but we must not speak hardly of those

who, in spite of disadvantages, seek entrance into the Service. At the same time the authorities must know that many brilliant men are looking elsewhere for a career, and that it depends upon an enlightened policy whether the Medical Department of the army will be again largely recruited from among the most promising of our young surgeons.

I pass from this question of the day to congratulate the prize-winners. Mr. D. A. Fitzgerald and Mr. F. J. Palmer have been awarded the Carmichael and the Mayne Scholarships respectively, and having regard to the extent and severity of the course their success is a brilliant one. In the classes Mr. J. S. P. Stewart has won three firsts and a second, and Mr. E. Glenny two firsts and a second, a result which points to still higher distinction in the future. Then Miss Dreaper and Mrs. Hennessy have each carried off a first and a second prize, and thus illustrated the fervour with which our lady students devote themselves to their work. The rest of the list shows that a large proportion of the class has engaged diligently in the studies of the various years, and it is a special gratification to find that in every instance a candidate has qualified for a first rank. Of the number who just failed in the struggle I have no record, but I wish to encourage them and all others to try again. They must not take defeat to heart too keenly and throw down their hands in despair. I have known some distinguished men who never could win a school prize, although later they earned the highest successes in life; and I trust that some of you who miss your names from the returns will yet achieve that which you have lost to-day. There is much that I should like to say to you now, for next year another President will speak to you from this place; but time is running out and I have already trespassed upon your indulgence. But I should like you always to bear in mind in your work that examinations are not the only things for which you should read. To have in your mind constantly that you must only make up what will get you through the portal is demoralising; it begets the worst of all mental processes—cramming. Prepare for your examination by all means, but let your reading be wide and generous. And, next, I sometimes feel that students do not value as they ought the work in the hospital wards. Give to this all the time you can spare, not with your hands in your pockets, as I occasionally see, but with your mind keenly set upon the cases which are before you. For, necessary as all teaching in the schools is, and important as it is that you should be highly informed in the subjects taught here, it is with the living sick you will have to deal when you come to practise. No amount of

knowledge will avail you unless you can apply it—unless you are able to recognise disease or injury and use your remedies. In a very few years these classes which I now address will have passed away into the world. You will be scattered here and there; some in large cities, but many in places where you will be isolated from the helping mind and hand of a member of your profession. Then you will realise in its fullest extent what responsibility is—what it means to have in your charge a case which you find difficult to read and which you must deal with alone. Nothing will be more distressing to you than this failure to help if after all the fault is your own. I ask you, therefore, to try to realise that responsibility now before the day of humiliation comes, and by your industry to relieve yourself of the possibility of self-censure.

With these words I draw to a close, only waiting to assure you that your teachers will do their part, that we all wish you the highest success, and that we shall look to you with confidence to uphold the reputation of the medical school of this old city of Dublin.

Medical Arrangements for the Tirah Expeditionary Force.

WE have received from Surgeon-Major-General ALBERT A. GORE, M.D., Principal Medical Officer to Her Majesty's Forces in India, the official statement of the medical arrangements made under his supervision for the Tirah Expeditionary Force, and approved by His Excellency the Commander-in-Chief in India. The document is dated Army Head-Quarters, India, Medical Division, Simla, 3rd October, 1897, and serves as a useful *résumé* of the most modern arrangements in Field Service in India.

Under the heading "Organisation," the composition of the Expeditionary Force is set out in Section I. The main column consists of two divisions of troops. Then there are the Peshawar column, the Kurram movable column, and the Rawal Pindi reserve brigade. The numerical strength of the force is not stated, but it must be considerable.

SECTION II.—ADMINISTRATION.

9. The following principal medical officers are sanctioned:—

For the Army Staff.

Surgeon-Colonel (with temporary rank of Surgeon-Major-General) G. Thomson, C.B., Indian Medical Service.

Secretary, Surgeon-Major W. A. Morris, Army Medical Staff.

First Division.

Surgeon-Colonel E. Townsend, Army Medical Staff.

Second Division.

Surgeon-Colonel G. M^cB. Davis, D.S.O., Indian Med. Service.

Line of Communication.

Brigade-Surgeon-Lieutenant-Colonel (with temporary rank of Surgeon-Colonel) W. E. Saunders, Army Medical Staff.

Peshawar Column.

Brigade-Surgeon-Lieutenant-Colonel R. G. Thomsett, Army Med. Staff.

Kurram Movable Column.

Brigade-Surgeon-Lieutenant-Colonel W. R. Murphy, D.S.O., Indian Medical Service.

Rawal Pindi Reserve Brigade.

While at Rawal Pindi, the medical administration will be conducted by the Principal Medical Officer, Rawal Pindi District, and should the brigade move forward it will come under that of the Principal Medical Officer of the force to which it may be attached.

10. The medical staff offices will be provided as follows:—

For the Army Staff, from the Malakand Field Force^a (2 clerks).

For the 1st Division, from the Mohmand Field Force (2 clerks).

For the 2nd Division, from the Madras Command (2 clerks).

For the Line of Communication (1 clerk from the Bombay Command, and 1 employed temporarily).

For the Peshawar Column, from the Bengal Command (1 clerk).

For the Kurram Movable Column, from the Kohat Force (1 clerk).

11. Stationery will be supplied from any station hospital, the latter replacing the issue from departments concerned.

12. The general service 80lb. tent authorised for each medical staff office will, if not in possession, be obtained from the Rawal Pindi Arsenal, and the furniture from the Military Works Department, Punjab Command.

SECTION III.—CORPS-UNITS.

13. Each corps-unit and each commissariat-transport unit will be equipped as laid down in Appendix No. 1, *Field Service Departmental Code, Medical*, and first field dressing packets will be issued to every officer and soldier.

^a Two temporary clerks will be employed for the Malakand Field Force instead, namely one first grade and one second grade.

14. Collateral medical charges will be formed locally for the several batteries of Artillery and companies of Sappers and Miners.

15. A strict medical examination of officers, troops and followers will be made as laid down in paragraph 49, *Field Service Departmental Code, Medical*.

16. A Staff Surgeon, as a collateral charge, is sanctioned for the Army Staff, 1st Division, 2nd Division, Line of Communication, Peshawar Column, Kurram Movable Column, and Reserve Brigade.

17. An experienced Hospital Assistant with a pair of field medical panniers and a general service 80 lbs. tent will be placed at the disposal of the staff surgeon of the Army Staff by the Punjab Command.

SECTION IV.—FIELD HOSPITALS.

18. Field Hospitals will move to the front under the orders of the Quarter-Master-General in India.

19. In addition to the authorised reserve to be always maintained by the Commissariat-Transport Department in the advanced bases, each field hospital will take a reserve of 25 per cent. of medical comforts, and a box of reserve medicines, *vide* Appendix 20, *Field Service Departmental Code, Medical*.

20. All field hospitals detailed for the Expeditionary Force (with the exception of No. 11 British and No. 64 Native on the Line of Communication, and the Field Hospitals of the Reserve Brigade, which will be supplied with tongas and dandies) will be equipped with riding mules or ponies (with saddles) and dandies.

21. Transport will be supplied as follows:—

1st and 2nd Divisions—Pack mules.

Line of Communication—Normal scale.

Peshawar Column—Normal scale.

Kurram Movable Column—Normal scale.

Rawal Pindi Reserve Brigade—Normal scale.

22. The supply of ambulance tongas for the line of communication from Kohat to Khushalgarh will be arranged for by the Punjab Command.

SECTION V.—FIELD MEDICAL STORE DEPOTS.

23. No. 1 Field Medical Store Dépôt, which is already equipped, will supply the medical units of the 1st division, and No. 2 Field Medical Store Dépôt, which will be mobilised at Meean Meer, will supply those of the 2nd division. Both these dépôts will take a special reserve of 100 lbs. of Quinine, and will move forward under orders issued by the Quarter-Master-General in India.

24. These dépôts should be as near the advanced field hospitals as possible, and will therefore be provided with mule transport.

SECTION VI.—LINE OF COMMUNICATION.

25. The line of communication will extend from Kohat inclusive to Tirah, and will include the posts on the Samana Range.

26. A portion of Section C, No. 3 British Field Hospital will be sent to Parachinar with the 2 guns of 9th Field Battery.

27. A rest depôt hospital, 25 beds for British troops and 25 beds for Native troops and followers, will be formed under the orders of the Lieutenant-General Commanding the Forces, Punjab, at Khushalgarh in British Private's tents; also one at Goombut if deemed necessary.

28. Railway ambulance carriages (properly fitted with dandies, which will be supplied by the Commissariat-Transport Department) will be provided at Khushalgarh and Peshawar, on the requisition of the Senior Medical Officer, for conveying the sick and wounded to the general hospitals at Rawal Pindi and Nowshera respectively.

29. Any additional ambulance transport required for lines of communication will be provided by the Commissary-General, Punjab Command.

SECTION VII.—GENERAL HOSPITALS.

30. The following general hospitals will be established :—

No. 1 British for 500 beds at Rawal Pindi.

„ 2 Native „ 500 „ at „

„ 3 British „ 250 „ at Nowshera.

„ 4 Native „ 500 „ at „

„ 5 „ „ 200 „ at Kohat.

31. The general hospitals at Rawal Pindi will receive the sick and wounded from the 1st and 2nd divisions; the general hospitals at Nowshera will receive the sick and wounded from the Peshawar Column and Malakand and Swat Valley forces, and the Native general hospital at Kohat will receive the Native sick and wounded from the Kurram Column and from troops on the Line of Communication, and from thence will be passed on to Rawal Pindi if necessary.

33. A special extra reserve supply of antiseptic gauze (3,000 yards), carbolised catgut (5 lbs.), and Esmarch's bandages (12 sets) will be sent to the Kohat general hospital for use with the sick in the front if necessary.

SECTION VIII.—RETURNS.

34. Field Service returns will be taken into use from 9th October, 1897.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SESSION OF 1896-97.

President—JAMES LITTLE, M.D., F.R.C.P.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF MEDICINE.

President—Sir GEORGE F. DUFFEY, M.D., President of the Royal College of Physicians of Ireland.

Sectional Secretary.—H. C. TWEEDY, M.D., F.R.C.P.I.

Friday, May 21, 1897.

The PRESIDENT in the Chair.

Charcot's Disease.

DR. CONOLLY NORMAN related a case of "Charcot's Disease," exhibited the patient, and also exhibited skiagrams showing the condition of the bones.

PROFESSOR BENNETT said he thought that the point was the nature of the change in the joints. Was the case to be regarded as a variation of chronic articular rheumatism, or as a distinct disease? His knowledge of Charcot's disease was very small, he said, having only seen one specimen in this city. He had seen Charcot's specimens exhibited in London, at the late Congress. The destruction of bone was specially great in Charcot's disease—much greater than in chronic articular rheumatism. He was inclined to think that the disease was essentially the same as chronic articular rheumatism in pathological detail, except that there was a great deal of effusion. As a rule, chronic articular rheumatism was, in this country, attended with effusion, but not so in France, as proved by the French term applied to the disease—*arthrite sèche*.

DR. FINNY said that in his limited experience of Charcot's disease he had not found the cases quite the same as Dr. Norman's. The effusion in the joints which he had seen was very much greater, and the backward movement of the leg was one of the remarkable features. He had not himself found in neuritic cases that motility in the joints to which Dr. Norman had referred. He was very much in a difficulty as to the disease being tabetic, because of the mental condition of the patient, and it was not easy to test for knee jerk. If it was a case of tabes, it was interesting to note that the patient was unaffected in the upper

limbs; of course, the disease might be limited to the lower extremities for a long time, but there seemed to be none of the other occasional symptoms. The case was one which, he was sure, must remain for a certain time in an unknown category.

DR. NORMAN, in reply, said that everyone was familiar with the doctrine that Charcot's disease was merely a variety of chronic articular rheumatism. He thought, perhaps, that a truer view to take was that some nervous disorder with which they were at present unfamiliar was associated with chronic articular rheumatism. With regard to the absence of backward displacement to which Dr. Finny had referred, he thought it possible that the condition of disturbance in the joints had been arrested before the customary destruction of the posterior ligaments. He could not say how long the condition had lasted, but it did not exist in 1890, while it did in 1896, and, according to the patient's own statement, the disease would have commenced in 1895. The only sign of tabes which she exhibited—excepting the condition of her legs—was the Argyll-Robertson phenomenon. There was a great deal of anæsthesia still in her legs, which, of course, was in favour of alcoholic neuritis. He thought it likely that the condition was still undescribed.

A Fatal Case of Alcoholism.

DR. KNOTT read a paper on "A Fatal Case of Alcoholism."
The Section then adjourned.

SESSION OF 1897-98.

President—EDWARD H. BENNETT, M.D., F.R.C.S.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF PATHOLOGY.

President—J. M. PURSER, M.D.
Sectional Secretary—E. J. McWEENEY, M.D.

Friday, November 5, 1897.

The PRESIDENT in the Chair.

Opening Address.

THE PRESIDENT delivered his opening Address.

Suppurating Kidney.

The SECRETARY (Dr. McWeeney), in the absence of MR. J. S. M'ARDLE exhibited a suppurating kidney. The specimen was an

enormous suppurating kidney which had been removed by Mr. M'Ardle some eight days' previous by nephrectomy. The kidney was riddled with abscesses, which differed in many respects from those met with in tubercular disease, and microscopical examination of the material which came from them did not reveal the presence of tubercle bacilli; it did, however, reveal a considerable number of organisms of different sizes and shapes, which proved on cultivation to be *Bacillus coli*. Shake-cultivations on agar-agar showed the cylinder of substratum quite broken up by the development of gas, which is exceedingly characteristic of *Bacillus coli*, and as the result of this gas development, and the appearances on gelatine, there could be no doubt that the micro-organism contained in the pus, and probably responsible for the condition of the kidney, was *Bacillus coli*. *Bacillus coli* has a tendency to invade the organs of the body *post mortem*, but this kidney was removed during the life of the patient, and *Bacillus coli* was the only organism found in the pus. The speaker was inclined to look upon the case as a primary infection of the kidney with *Bacillus coli*. So far as he (Dr. McWeeney) knew, there was no very good description of the state of the kidney when primarily infected by this organism. Should careful further examination of microscopic sections prove the case non-tubercular, then it should be regarded as a type specimen, and one upon which might be founded a description of the conditions found in the kidney as the result of primary infection with *Bacillus coli*. The patient (a female) was making a good recovery.

Genito-Urinary Organs from a case of Imperforate Anus.

THE SECRETARY (Dr. McWeeney), in the absence of DR. A. J. HORNE, showed the genito-urinary organs, from a case of imperforate anus, showing persistent cloacal arrangement, bicornuate uterus, and unilateral cystic degeneration of the kidney. The specimen was obtained by Dr. McWeeney at the National Lying-in Hospital, Holles-street, from a female child with imperforate anus, under the care of Dr. Horne. The child was rather small, and appeared to be about the end of the eighth or commencement of the ninth month. Colotomy had been performed by Mr. M'Ardle, and the descending colon brought to the surface in the lumbar region and successfully opened. The child lived for two days after this procedure. Some fæces had come through the artificial anus, but, nevertheless, at the end of two days the child died. Shortly before death it was noticed that on pressure being applied to the suprapubic region fæcal matter exuded from the

vagina. At the *post-mortem* examination Dr. McWeeney had been much surprised at the state of affairs, and was unable at first to recognise the anatomical conditions. Accordingly he removed the genito-urinary apparatus, keeping it, as far as possible, in connection with the skin. On examining the specimen, the rectum was seen to become gradually narrower, and, running forwards, to join the neck of the bladder, so as to form a sort of cloaca which was continuous below with the vagina, and which received on each side the aperture of a uterine cornu. Both cornua were very greatly distended, forming thin walled structures larger than the urinary bladder, and containing urine. The left kidney possessed a ureter, which was at first very thin and narrow, and then becoming swollen out into a tube as wide as the small intestine, was lost upon the side of the left cornu of the uterus. It was this kidney which had furnished the urine which had distended the bladder and uteri; owing to the distension of the left uterine cavity the ureter had been pressed upon and undergone obliteration. The same process may have occurred at an earlier stage on the other side, for the right kidney was reduced to a small hydronephrotic sac, and its ureter was completely obliterated. The cloaca received the orifices of the bladder, rectum, and two uterine cornua, and was continued as a narrow tube directly into the vagina, opening externally between the two labia minora. Of the proctodæum there appeared to be no trace. With regard to the family history, the child previous to the present was born with the left hand amputated at the carpus. The first child was perfect.

Osteo-Arthropathy.

DR. O'CARROLL showed casts and microscopic sections from a case of mixed tuberculosis and carcinoma of one lung, in which pulmonary osteo-arthropathy was an early and well-marked phenomenon. The patient, aged forty-nine at death, had been a year under observation in the Whitworth Hospital. Admitted on account of "pains in his joints," he was found to have mischief in the upper portion of the left lung, and he gave a history of cough dating from a year before. The condition was at first diagnosticated as cancer, but later, when signs of excavation manifested themselves, phthisis was suspected, even though the bacilli of tubercle were not found. This latter fact may be in part, perhaps, explained by the hæmorrhagic rather than purulent character of the sputum. Finally, the presence of cancer was made certain by the protrusion outwards into the axillary area of a tumour which involved three of the ribs and intercostal spaces. The necropsy showed the left lung

reduced practically to a single large abscess sac, in the wall of which, and continuous with the costal tumour, was a large alveolar cancer. Sections of a gland at the root of the lung showed similar cancer areas side by side with tubercular areas. The increase in the size of the extremities was easily differentiated from that of acromegaly by the characteristic shape, and by the presence of bulbar terminal phalanges. The pains were not due to chronic rheumatism, for they ceased and never recurred after his admission. There was no stiffness of the joints or pain on passive movement. The spine showed the lower dorsal kyphosis described by Marie. The case was of interest as demonstrating the existence in the lung of cancer and tubercle side by side, and of Marie's osteo-arthritis developed within a year after the onset of lung disease, which remained to the very end confined to one side. Professor O'Sullivan had made the microscopic part of the investigation of the case.

DR. MCWEENEY, in referring to the microscopic sections of the lung, said that one of them hardly seemed to reveal any structural details; the other section unquestionably showed carcinoma. As to whether tubercular disease was also present he hesitated to pronounce a definite opinion. Necrotic and caseated patches were visible, but patches of neoplasms were so frequently met with in this condition that it would not be right to say that there was certainly tuberculosis. He had not been able to see anything which seemed to him to give evidence of tuberculosis.

DR. O'CARROLL, in reply, said that in justice to Professor O'Sullivan he had asked him to prepare the sections at the last moment, and this would account for the specimen being thick. He had examined the second section with Professor O'Sullivan, who satisfied him that there were distinct caseous-looking necrotic patches with giant cells in them. He had hardly any doubt that Dr. McWeeney could be satisfied on this point. There were, of course, difficulties in the case, and the diagnosis was in favour of malignant disease. Clinically there were difficulties regarding the tuberculous signs. He thought that the case would bear some further study.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl. ;

F.R.C.P.I. ; F. R. Met. Soc. ;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four weeks ending Saturday, November 6, 1897.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Oct. 16	Oct. 23	Oct. 30	Nov. 6		Oct. 16	Oct. 23	Oct. 30	Nov. 6
Armagh -	7·0	28·0	35·1	0·0	Lisburn -	21·3	17·0	8·5	21·3
Ballymena	16·9	22·5	11·3	16·9	Londonderry	15·7	20·4	23·6	18·8
Belfast -	18·9	18·0	24·3	23·0	Lurgan -	4·6	22·8	9·1	9·1
Carriekfergus	11·7	23·4	5·8	5·8	Newry -	16·1	28·2	8·1	20·1
Clonmel -	19·5	9·8	14·6	34·2	Newtownards	0·0	28·3	28·3	39·7
Cork -	19·4	18·7	12·5	20·1	Portadown	18·6	43·3	12·4	24·7
Drogheda -	38·0	30·4	11·4	11·4	Queenstown	5·7	11·5	34·4	5·7
Dublin -	23·3	20·3	26·5	20·3	Sligo -	35·5	25·4	40·6	50·8
Dundalk -	8·4	12·6	16·8	20·9	Tralee -	11·2	11·2	22·4	16·8
Galway -	22·7	18·9	15·1	34·0	Waterford	27·9	9·9	23·9	9·9
Kilkenny -	14·2	18·9	28·3	23·6	Wexford -	27·1	9·0	4·5	4·5
Limerick -	11·2	9·8	19·6	23·9					

In the week ending Saturday, October 16, 1897, the mortality in thirty-three large English towns, including London (in which the rate was 16·1), was equal to an average annual death-rate of 16·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·1 per 1,000. In Glasgow the rate was 19·4. In Edinburgh it was 21·7.

The average annual death-rate represented by the deaths registered during the week in the twenty-three principal town districts of

Ireland was 20·0 per 1,000 of their aggregate population, which, for the purposes of this return, is estimated at 984,720.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in sixteen of the districts to 6·2 in Portadown—the 3 deaths from all causes registered in that district comprising 1 from scarlatina. Among the 102 deaths from all causes registered in Belfast are 2 from whooping-cough, 2 from diphtheria, 2 from simple continued and ill-defined fever, 6 from enteric fever, and 1 from diarrhœa. The 28 deaths in Cork comprise 1 from whooping-cough and 4 from diarrhœa.

In the Dublin Registration District the registered births amounted to 163—90 boys and 73 girls; and the registered deaths to 161—90 males and 71 females.

The deaths, which are 3 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·0 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 23·3 per 1,000. During the forty-one weeks of the current year, ending with Saturday, October 16, the death-rate averaged 30·1, and was 3·3 over the mean rate in the corresponding period of the ten years 1887–1896.

As in the week preceding, 21 deaths from zymotic diseases were registered. This number was 5 below the average for the corresponding week of the last ten years. The 21 deaths comprise 1 from scarlet fever (scarlatina), 2 from influenza and its complications, 1 from whooping-cough, 2 from diphtheria, 7 from enteric fever, 1 from choleraic diarrhœa, 3 from diarrhœa, and 1 from erysipelas.

The cases of scarlatina admitted to hospital numbered 27, being 5 in excess of the admissions in the preceding week, and 6 over the number for the week ended October 2. Twenty scarlatina patients were discharged, and 122 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week. This number is exclusive of 25 convalescents at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Twenty-nine cases of enteric fever were admitted to hospital, being 5 over the admissions in the preceding week, but 9 under the number for the week ended October 2. Thirteen patients were discharged, 3 died, and 132 remained under treatment on Saturday, being 13 over the number in hospital on that day week.

Deaths from diseases of the respiratory system, which had fallen from 29 for the week ended October 2 to 22 in the following week, rose to 30, or 8 over the average for the corresponding week of the last ten years. The 30 deaths comprise 17 from bronchitis, 7 from pneumonia, and 2 from croup.

In the week ending Saturday, October 23, the mortality in thirty-three large English towns, including London (in which the rate was 16·8), was equal to an average annual death-rate of 16·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·3 per 1,000. In Glasgow the rate was 21·8, and in Edinburgh it was 18·1.

The average annual death-rate in the twenty-three principal town districts of Ireland was 19·0 per 1,000 of their aggregate population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in eleven of the districts to 11·3 in Newtownards—the 5 deaths from all causes registered in that district comprising 1 from measles and 1 from diarrhœa. Among the 97 deaths from all causes registered in Belfast are 1 from whooping-cough, 2 from simple continued and ill-defined fever, 4 from enteric fever, and 3 from diarrhœa. The 27 deaths in Cork comprise 1 from enteric fever and 2 from diarrhœa. Of the 7 deaths in Newry 1 was caused by measles and 1 by diarrhœa. The 5 deaths in Lurgan comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 188—91 boys and 97 girls; and the registered deaths to 142—64 males and 78 females.

The deaths, which are 11 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·2 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 20·3 per 1,000. During the forty-two weeks of the current year, ending with Saturday, October 23, the death-rate averaged 29·9, and was 3·2 over the mean rate in the corresponding period of the ten years 1887–1896.

The number of deaths from zymotic diseases registered was 18, being 5 below the average for the corresponding week of the last ten years, and 3 under the number for the previous week. The 18 deaths comprise 1 from measles, 2 from scarlet fever (scarlatina),

1 from whooping-cough, 1 from diphtheria, 6 from enteric fever, 1 from cholera infantum, and 2 from diarrhoea.

The weekly number of cases of scarlatina admitted to hospital rose to 34. Twelve scarlatina patients were discharged, 2 died, and 142 remained under treatment on Saturday, being 20 over the number in hospital at the close of the preceding week. This number is exclusive of 25 convalescents at Beneavin.

Thirty-one cases of enteric fever were admitted to hospital, against 29 in the preceding week. Twenty-two patients were discharged, 2 died, and 139 remained under treatment on Saturday, being 7 over the number in hospital on that day week.

The hospital admissions included also 2 cases of typhus. They were the only cases of the disease in hospital on Saturday.

Diseases of the respiratory system caused 31 deaths, being 7 in excess of the average for the corresponding week of the last ten years, and 1 over the number for the previous week. The 31 deaths comprise 18 from bronchitis, 7 from pneumonia, and 3 from croup.

In the week ending Saturday, October 30, the mortality in thirty-three large English towns, including London (in which the rate was 17·7), was equal to an average annual death-rate of 17·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·9 per 1,000. In Glasgow the rate was also 19·9, and in Edinburgh it was 18·5.

The average annual death-rate represented by the deaths registered in the twenty-three principal town districts of Ireland was 22·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·3 per 1,000, the rates varying from 0·0 in thirteen of the districts to 11·3 in Newtownards—the 5 deaths from all causes registered in that district comprising 2 from measles. Among the 131 deaths from all causes registered in Belfast are 3 from whooping-cough and 11 from enteric fever. Two of the 18 deaths in Cork were from diarrhoea. Among the 12 deaths in Waterford are 2 from whooping-cough and 1 from diarrhoea, and the 4 deaths in Dundalk comprise 1 from simple continued fever and 1 from diarrhoea. The Registrars of Tralee Nos. 1 and 2 Districts report the presence of scarlatina of a mild type in their districts.

In the Dublin Registration District the registered births amounted to 210—97 boys and 113 girls; and the registered deaths to 189—101 males and 88 females.

The deaths, which are 27 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·2 in every 1,000 of the population. Omitting the deaths (numbering 11) of persons admitted into public institutions from localities outside the district, the rate was 26·5 per 1,000. During the forty-three weeks of the current year, ending with Saturday, October 30, the death-rate averaged 29·9, and was 3·3 over the mean rate in the corresponding period of the ten years 1887-1896.

The number of deaths from zymotic diseases registered was 20, being 2 over the number for the preceding week, but 5 under the average for the forty-third week of the last ten years. The 20 deaths comprise 2 from scarlet fever (scarlatina), 1 from diphtheria, 1 from simple continued fever, 9 from enteric fever, 5 from diarrhoea, and 1 from erysipelas.

Thirty-six cases of scarlatina were admitted to hospital, against 34 in the preceding week. Thirty-four scarlatina patients were discharged, 1 died, and 143 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week. This number is exclusive of 25 convalescents at Beneavin.

The number of cases of enteric fever admitted to hospital was 26, being 5 under the admissions in the preceding week. Fourteen patients were discharged, 1 died, and 150 remained under treatment on Saturday, being 11 over the number in hospital on that day week.

The hospital admissions included, also, 1 case of typhus: 3 cases of the disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system rose to 40, or 13 in excess of the average for the corresponding week of the last ten years. They comprise 23 from bronchitis and 15 from pneumonia.

In the week ending Saturday, November 6, the mortality in thirty-three large English towns, including London (in which the rate was 18·5), was equal to an average annual death-rate of 18·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·8 per 1,000. In Glasgow the rate was 20·1, and in Edinburgh it was 17·4.

The average annual death-rate in the twenty-three principal town districts of Ireland was 20·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·5 per 1,000, the

rates varying from 0·0 in eleven of the districts to 11·3 in Newtownards—the 7 deaths from all causes registered in that district comprising 1 from measles and 1 from diarrhoea. Among the 124 deaths from all causes registered in Belfast are 5 from whooping-cough, 1 from diphtheria, 9 from enteric fever, and 2 from diarrhoea. The 29 deaths in Cork comprise 1 from measles, 1 from diphtheria, and 4 from diarrhoea. Among the 17 deaths in Limerick are 1 from each of the following—diphtheria, enteric fever, and diarrhoea. Of the 7 deaths in Clonmel 2 were from enteric fever.

In the Dublin Registration District the registered births amounted to 190—88 boys and 102 girls; and the registered deaths to 144—88 males and 56 females.

The deaths, which are 40 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·5 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 20·3 per 1,000. During the forty-four weeks of the current year, ending with Saturday, November 6, the death-rate averaged 29·7, and was 3·1 over the mean rate in the corresponding period of the ten years 1887–1896.

Only 14 deaths from zymotic diseases were registered, being 12 below the average for the corresponding week of the last ten years, and 6 under the number for the previous week. They comprise 1 from influenza, 1 from whooping-cough, 2 from diphtheria, 8 from enteric fever, and 1 from diarrhoea.

The weekly number of cases of scarlatina admitted to hospital, which had gradually risen from 22 in the week ended October 9 to 36 in the week ended October 30, fell to 17. Seventeen scarlatina patients were discharged, 1 died, and 142 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week. This number is exclusive of 25 convalescents at Beneavin.

Forty-three cases of enteric fever were admitted to hospital against 26 in the preceding week, and 31 in the week ended October 23. Twenty-three patients were discharged, 4 died, and 166 remained under treatment on Saturday, being 16 over the number in hospital on that day week.

The hospital admissions included, also, 1 case of typhus: 3 cases of the disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system fell to 33, or 1 under the average for the corresponding week of the last ten years. The 33 deaths consist of 13 from bronchitis, 16 from pneumonia, and 4 from croup.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of October, 1897.

Mean Height of Barometer, -	-	-	30·096 inches.
Maximal Height of Barometer (on 21st, 9 a.m.),	30·561	„	
Minimal Height of Barometer (on 16th, 2 a.m.),	29·074	„	
Mean Dry-bulb Temperature, -	-	-	51·1°.
Mean Wet-bulb Temperature, -	-	-	49·4°.
Mean Dew-point Temperature, -	-	-	47·6°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·331	inch.	
Mean Humidity, -	-	-	88·4 per cent.
Highest Temperature in Shade (on 17th),	-	-	62·9°.
Lowest Temperature in Shade (on 12th),	-	-	36·1°.
Lowest Temperature on Grass (Radiation) (on 12th),	-	-	33·0°.
Mean Amount of Cloud, -	-	-	52·4 per cent.
Rainfall (on 14 days), -	-	-	2·110 inches.
Greatest Daily Rainfall (on 14th), -	-	-	·637 inch.
General Directions of Wind, -	-	-	E., S.E., W.

Remarks.

Quite unlike the cold Octobers of 1894, 1895, and 1896, this month was strangely genial and fine—nay more, the temperature of the air actually rose towards the close, thus reversing the seasonal range for the time of year. The weather of the second week was, indeed, rough and wet; but this only accentuated the quietness and mildness of the beginning and end of the month. These features were due to the prevalence of anticyclonic conditions over Western and Central Europe, Ireland getting the benefit of the warmth attending the southerly winds of the area of high atmospheric pressure.

In Dublin the arithmetical mean temperature (52·3°) was much above the average (49·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 51·1°. In the thirty-two years ending with 1896, October was coldest in 1892 (M. T.=44·8°), and in 1896 (M. T.=45·0°). It was warmest in 1876 (M. T.=53·1°). In 1895 the M. T. was only 46·2°.

The mean height of the barometer was 30·096 inches, or 0·256 inch above the corrected average value for October—namely, 29·840 inches. The mercury rose to 30·561 inches at 9 a.m. of the 21st, and fell to 29·074 inches at 2 a.m. of the 16th. The

observed range of atmospheric pressure was, therefore, as much as 1·487 inches.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was $51\cdot1^{\circ}$, or only $1\cdot9^{\circ}$ below the value for September. The arithmetical mean of the maximal and minimal readings was $52\cdot3^{\circ}$, compared with a twenty-five years' average of $49\cdot7^{\circ}$. Using the formula, *Mean Temp.* = *Min.* + (*Max.* - *Min.* \times $\cdot485$), the value was $52\cdot1^{\circ}$, or $2\cdot6^{\circ}$ above the average mean temperature for October, calculated in the same way, in the twenty-five years, 1865-89, inclusive ($49\cdot5^{\circ}$). On the 17th the thermometer in the screen rose to $62\cdot9^{\circ}$ —wind, S.; on the 12th the temperature fell to $36\cdot1^{\circ}$ —wind, W.N.W. The minimum on the grass was $33\cdot0^{\circ}$, also on the 12th. The thermometer did not sink to or below 32° in the screen, or even on the grass.

The rainfall was 2·110 inches, distributed over 14 days—the rainfall and the rainy days were decidedly below the average. The average rainfall for October in the twenty-five years, 1865-89, inclusive, was 3·106 inches, and the average number of rainy days was 17·6. In 1880 the rainfall in October was very large—7·358 inches on 15 days. In 1875, also, 7·049 inches fell on 26 days. On the other hand, in 1890, only ·639 inch fell on but 11 days; in 1884, only ·834 inch on but 14 days; and in 1868 only ·856 inch on 15 days.

Lightning was seen on the night of the 15th-16th. High winds were noted on 9 days, and attained the force of a gale on three occasions—the 10th, 16th, and 17th. The atmosphere was more or less foggy in Dublin on the 1st, 2nd, 13th, 14th, 20th, 21st, 28th, 30th, and 31st. Hail fell on the 10th. A lunar halo appeared on the 7th. A solar halo was seen on the 28th.

Friday, the 1st, was at first foggy and cloudy, afterwards fine and mild. On Saturday, the 2nd, rain fell at intervals—heavily for an hour in the forenoon and still more heavily in the afternoon—the total measurement was ·293 inch.

Generally favourable weather prevailed during the week ended Saturday, the 9th, which was signalised by a cold snap of some intensity on the Continent and also in England, Ireland and Scotland entirely escaping it owing to the prevalence of S.W. and W. winds and cloudy skies. On Sunday an anticyclone lay off the W. of Ireland, where the barometer stood above 30·4 inches, and a V-shaped depression was found over the North Sea. The latter system had caused a considerable fall of rain during the previous 24 hours, first in Ireland and later on in England. The weather

after this remained very fine until Tuesday evening, when rain fell in Ireland, as a large tongue of high atmospheric pressure formed over the Baltic, North Sea, and England, steepening gradients for S. and S.W. winds in Ireland and Scotland and causing a cold N.E. wind to spring up all over Central Europe. Calms, fogs, and low temperatures set in over England, and a continuous fall of snow occurred at Munich, freezing weather being felt all over Germany, Switzerland, and France. On Thursday night the thermometer fell to 28° in the shade in Paris and at Belfort. Towards the close of the week a new area of high atmospheric pressure was in course of formation off the S.W. of Ireland, in which country temperature was giving way while the weather became fine and dry although cloudy. The mean height of the barometer in Dublin was 30.305 inches, pressure ranging between 30.474 inches at 9 a.m. of Monday (wind, W.N.W.) and 30.070 inches at 1 p.m. of Friday (wind, W.N.W.). The corrected mean temperature was 51.7° . The mean dry bulb reading at 9 a.m. and 9 p.m. was 50.7° . On Monday the screened thermometers fell to 42.1° , on Thursday they rose to 59.2° . The rainfall was .187 inch on three days, .140 inch being measured on Tuesday. The prevalent winds were W.N.W. and S.W.

Very unsettled weather prevailed throughout the week ended Saturday, the 16th. Until Wednesday the British Islands were affected by a large depression, which was found near the Shetlands on Sunday morning and moved slowly thence to Scandinavia, becoming deeper and spreading out southwards as it travelled. By 8 a.m. of Tuesday the barometer had fallen to 28.97 inches at Christiansund, on the W. coast of Norway, near the centre of the depression. At first this system caused strong westerly winds, clouds and some rain in most districts, temperature being rather high on Sunday (Dublin, Loughborough and Leith recording 60° , Aberdeen 63°). As the disturbance moved eastward, however, the wind drew into N.W. and N. and the air became much colder, raw and searching. On Monday night the thermometer in the screen fell to 31° at Parsonstown, and 36° in Dublin. Hail, sleet, and snow fell in Scotland on Tuesday. On Wednesday morning, while the cold N.W. winds of the northern depression were still blowing in that country, a new depression appeared off the S.W. of Ireland. Under its influence the wind shifted to E., S.E., or S. over the southern half of the United Kingdom, and temperature rose considerably, while rain fell heavily in Ireland, and in the N.W. and N.E. of England, from time to time. Scotland came within the sphere of the

southwestern depression on Friday, so that an easterly gale and heavy rainfall occurred. Lightning was seen on Friday night. During the last three days abrupt changes from foul to fair weather took place, particularly in and near Dublin. In this city the mean height of the barometer was 29·709 inches, the range being from 30·069 inches at 9 a.m. of Sunday (wind, W.), to 29·074 inches at 2 a.m. of Saturday (wind, S.). The corrected mean temperature was 49·9°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 49·3°. On Sunday the screened thermometers rose to 59·8°, on Tuesday they fell to 36·1°. The rainfall was 1·302 inches on six days, ·637 inch being measured on Thursday. The prevalent winds were W.N.W. and S.S.E.

Opening with unsettled, very rough weather, the week ended Saturday, the 23rd, proved extremely fine and quiet. The change was brought about by the spreading northwestwards and northwards of an anticyclone, which was already forming over Central Europe early on Sunday. At that time a large and deep depression was travelling in a northerly direction across Ireland, where a heavy southerly gale was blowing while rain fell in large quantities—the measurements at 8 a.m. were ·77 inch at Parsonstown, 1·40 inches at Roche's Point and 1·43 inches at Valentia Island. In Dublin the gale continued to blow for several hours, but the weather became bright and warm at 11 20 a.m., the shade thermometer rising to 62·9°. Gradients for S.W. winds were still rather steep but decreasing, so that the weather became fine and warm as the day advanced. On Tuesday anticyclonic conditions were fully established, the wind died down and calms and fogs became prevalent, especially at night. In the daytime there was hot sunshine, so that the diurnal range of temperature was unusually large. On Thursday the screened thermometer at Nairn, in the N.E. of Scotland, rose to 66°, while it fell to 32° during the ensuing night—a range of 34° within a few hours. From Thursday evening to the close of the week easterly and southeasterly breezes prevailed, and clouds increased on Saturday from S.E. At this time the barometer was falling decidedly in the south. In Dublin the mean atmospheric pressure equalled 30·215 inches, the range being from 29·403 inches at 9 a.m. of Sunday (wind, S. by W., blowing a gale), to 30·561 inches at 9 a.m. of Thursday (wind, W., light). The corrected mean temperature was 52·2°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 50·0°. On Sunday the screened thermometers rose to 62·9°, on Thursday they fell to 38·1°. Rain fell on Sunday to the amount of ·155 inch. The prevalent winds were at first S.W., then E.S.E.

Generally favourable weather was experienced in the week ended Saturday, the 30th. In the London district, however, rain fell on Monday and Tuesday and fog and gloom were very prevalent until Friday, which was bright and very warm. In Dublin conditions were at first much finer, and summerlike warmth was enjoyed on Wednesday, Thursday, and Friday. Saturday, on the contrary, proved dull, damp, and rainy as well as foggy at times. An anticyclone, of which mention was made in last week's report, held its position over the south of Scandinavia, Denmark, and Germany: but depressions appeared to be passing northwards across the Atlantic outside the West of Ireland after Monday. This distribution of atmospheric pressure caused strong southerly winds and warmth in Ireland. On Thursday night a strong southerly gale blew at Belmullet. On Saturday the barometer rose in Ireland, equalising pressure, so that calm, foggy and finally cooler weather set in. The change was accompanied by a fall of rain. In Dublin the corrected mean height of the barometer was 30·116 inches, pressure ranging between 30·252 inches at 9 a.m. of Sunday (wind, E.), and 29·893 inches at 9 p.m. of Friday (wind, S.S.E.). The corrected mean temperature was 54·0°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 53·6°. On Tuesday the screened thermometers fell to 45·2°, on Thursday they rose to 60·8°. The rainfall was ·173 inch, on three days, ·091 inch being measured on Saturday. The prevailing winds were E. and S.S.E. A solar halo was seen on Thursday. The mean temperature was about the same as that of the week ended Saturday, September 4, 1897.

Sunday, the 31st, was very fine and genial.

The rainfall in Dublin during the ten months ending October 31st amounted to 24·081 inches on 179 days, compared with 12·366 inches on 123 days during the same period in 1887 (the dry year), 23·716 inches on 146 days in 1895, 22·052 inches on 165 days in 1896, and a twenty-five years' average of 22·840 inches on 160·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in October amounted to 3·160 inches on 13 days. Of this quantity ·900 inch fell on the 14th, and ·690 on the 16th. The rainfall at Greystones in October, 1889, was no less than 6·935 inches on 22 days, or more than 11 times as great as the fall in October, 1890, when only ·600 inch fell on 13 days. From January 1st, 1897, up to October 31st, rain fell at Knockdolian on 171 days to the total amount of 32·730 inches. In 1892, the rainfall of the corresponding ten months was 27·223 inches on 140 days; in 1893, 17·801 inches

on 133 days; in 1894, 32.221 inches on 154 days; in 1895, 26.270 inches on 131 days, and in 1896, 27.837 inches on 137 days.

At Cloneevin, Killiney, Co. Dublin, the rainfall in October was 2.280 inches on 11 days, compared with .710 inch on 14 days in 1893, 6.460 inches on 17 days in 1894, 2.650 inches on 14 days, in 1895, 5.230 inches on 21 days in 1896, and a twelve years' average (1885-1896) of 3.388 inches on 16.2 days. On the 14th, .67 inch fell. Since January 1, 1897, 25.19 inches of rain have fallen at this station on 169 days.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall in October was 3.175 inches on 13 days. Of this quantity .970 inch was recorded on the 14th, and .650 inch on the 16th. The highest temperature in the screen was 62.0° on the 2nd, the lowest was 37.8° on the 12th. At this climatological station the rainfall from January 1 to October 31, inclusive, amounted to 30.664 inches on 157 days.

Corrigenda in the Report for August, 1897.

The mean height of the barometer should be 29.709 inches (not 29.708 inches). Par. 3, line 1, for "29.708 inches, .189 inch," read "29.709 inches, .188 inch." Par. 9, line 18, for "29.584," read "29.588."

EFFECTS OF ALCOHOL ON YEAST.

C. F. HODGE, Ph.D., Professor of Physiology in Clark University (*Medical Pioneer*, November 1897), has tried a number of experiments to test the action of alcohol on the growth of yeast. Yeast is able to grow until, by decomposition of sugar, its medium comes to contain 14 per cent. of common alcohol. At this point, no matter how much sugar and other materials remain, further growth is impossible. Four possibilities exist—(1.) That the growth of the yeast should continue until the 14 per cent. of alcohol is formed, and that then it should suddenly cease; (2.) That as the alcohol forms, the growth of yeast should *pro rata* lessen; (3.) That at first alcohol should stimulate the growth and afterwards lessen it (this is the theory on which many alcohol drinkers justify their practice); and (4.) That the first minute traces of alcohol should largely check the growth of the yeast. The last alternative Dr. Hodge finds to be the true one; $\frac{1}{1000}$ per cent. (1 in 100,000) caused a considerable retardation of growth, over half as much as ten times as much alcohol caused, and about a fifth as much as a hundred times as much alcohol caused. The curve when plotted out resembles that obtained from the fatigue of muscle or nerve cell.

PERISCOPE.

INTERNATIONAL LEPROSY CONFERENCE, BERLIN, 1897.

AT the close of the debates of the International Leprosy Conference, Berlin, 1897, the Secretaries present the following short Report of the general conclusions of the Conference. They believe that such a *résumé* will be especially desirable for those members who have been delegated by their respective Governments, and who have to make reports on the results of the Conference. As might be expected, a considerable portion of the discussion has related to the *Bacillus lepræ*, which the Conference accepts as the virus of leprosy, and which for upwards of twenty-five years has been known to the scientific world through the important discovery of Hansen and the able investigations of Neisser. The conditions under which the bacillus grows and develops are still unknown, as well as the manner in which it invades the human system; but from the discussions of the Conference, it seems probable that an unanimity of opinion will soon prevail in reference to its modes of subsequent dissemination within the human body. Very interesting observations have been brought forward in connection with the elimination of the bacilli in large quantities by means of the skin and the nasal and buccal mucous membranes of lepers; it is desired that such observations be confirmed where opportunities occur. The question is of very great importance to those who are entrusted with the care of the Public Health, as leprosy is now acknowledged to be a contagious disease. Every leper is a danger to his surroundings, the danger varying with the nature and extent of his relations therewith, and also with the sanitary conditions under which he lives. Although, among the lower classes, every leper is especially dangerous to his family and fellow workers, cases of leprosy appear in the higher social circles also. The theory of heredity of leprosy is now further shown to have lost ground, in comparison with the at present generally accepted theory of its contagiousness. The treatment of leprosy has had only palliative results up to the present time. Serum therapy has so far been unsuccessful. In view of the virtual incurability of leprosy and the serious and detrimental effects which its existence in a community causes, and considering the good results which have followed the adoption of legal measures of isolation in Norway, the Leprosy Conference, as a logical issue of the theory that the disease is contagious, has adopted the following resolution proposed by Dr. Hansen, and seconded by Dr. Besnier:—"1. In those countries, where leprosy forms foci, or has a great extension, we have in

isolation the best means of preventing the spread of the disease. 2. The system of obligatory notification, of observation and isolation, as carried out in Norway, is recommended to all nations with local self-government and a sufficient number of physicians. 3. It should be left to the legal authorities, after consultation with the medical authorities, to take such measures as are applicable to the special social conditions of the districts." The Report is signed by the Secretaries of the Conference, namely—Phin. S. Abraham, London; Ed. Arning, Hamburg; A. von Bergmann, Riga; E. Dubois Havenith, Brussels; J. J. Kinyoun, Washington; G. Thibierge, Paris; Edv. Ehlers, Copenhagen, General Secretary.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"Soloids" for Gynæcological Practice.

MESSRS. BURROUGHS, WELLCOME & Co., of Snow Hill Buildings, London, E.C., and 108 Pitt-street, Sydney, have recently prepared three "soloids" which cannot fail to be of use to gynæcologists. These compressed drugs for the instantaneous preparation of irrigations in uterine or vaginal maladies will be cordially welcomed by both physician and patient. They are the following:—

"Soloid" Zinc and Tannin Compound.—Each "soloid" contains—zinc sulphate, 5 grs.; lead acetate, 10 grs.; extract of opium, 2 grs.; tannin, 1 gr. One "soloid" or more, according to the necessities of the case, may be dissolved in sufficient warm water. This makes a very efficient irrigation when both sedative and astringent effects are desired. These "soloids" are supplied to the medical profession in bottles of 25, at 1s. 3d. per bottle.

"Soloid" Sodium Biborate Compound.—Each "soloid" contains—sodium biborate, 20 grs.; opium tincture, 10 minims. One "soloid" to four, dissolved in a pint of lukewarm water, forms a suitable solution, mildly alkaline, for use in the treatment of vaginal diseases of young persons and in cases attended by irritation or smarting of the neighbouring parts. They are supplied to the medical profession in bottles of 25, at 8d. per bottle.

In the chronic cases of adults the following "soloid" may be considered preferable:—

"Soloid" Alum Compound.—Each contains—zinc sulphate, 15 grs.; alum, 15 grs. A douche useful in chronic vaginal discharges is made by dissolving two to four in a pint of lukewarm water. They are supplied to the medical profession in bottles of 25, at 8d. per bottle.

In Memoriam.

HAUGHTON—O'GRADY—KING.

WITHIN as many weeks three of the ablest contributors to the columns of this Journal have passed into the "Silent Land." HAUGHTON, O'GRADY, KING—a trio, indeed, of Irish worthies whose place it will be hard to fill in the social, professional, and literary circles of Dublin life.

The REV. SAMUEL HAUGHTON, M.D. Univ. Dubl., Senior Fellow of Trinity College, Dublin; Fellow of the Royal College of Physicians of Ireland; F.R.S., M.R.I.A., D.C.L. Oxon., LL.D. Cantab. et Edin., passed away, aged seventy-five years, on October 31st. He was author of many scientific works, the best known, perhaps, being his "Principles of Animal Mechanics" and his "Lectures on Physical Geography." To the pages of this Journal he made the following communications:—

"Notes on Diabetes Insipidus." (Vol. XXXVI. Nov., 1863.)

"Specific Gravity of Urine." (Vol. XXXIX. Feb., 1865.)

"Mechanical Work done by the Human Heart." (Vol. XLIX. Feb., 1870.)

"Muscular Forces employed in Parturition." (Vol. XLIX. May, 1870.)

"Tuberculosis in the Large Carnivora." (Vol. LXVI. August, 1878.)

"Phantom Tumour simulating Pregnancy." (Vol. LXIX. April, 1880.)

"Canine Dumb-Madness." (Vol. LXXII. July, 1881.)

EDWARD STAMER O'GRADY, M.B., M.Ch., B.A. Univ. Dubl., F.R.C.S.I., M.R.C.P.I., M.R.I.A., died at his residence, 33 Merrion-square, Dublin, of septic pneumonia, on St. Luke's Day, October 18th. A staunch friend, a courtly gentleman, an able and fearless surgeon—such was O'Grady's character. As Senior Surgeon and

In Memoriam.

Lecturer on Clinical Surgery at Mercer's Hospital, he won for himself a high reputation. Probably no Dublin surgeon in recent years had more admirers in the ranks of the profession throughout Ireland than Mr. O'Grady.

His chief contributions to surgical literature found a place in this Journal. Of them the following list includes those which are best known :—

- “Ovariectomy.” (Vol. LVIII. August, 1874.)
- “Vesical Catarrh.” (Vol. LVIII. December, 1874.)
- “Notes of Surgical Cases.” (Vol. LIX. April, 1875.)
- “ ” ” ” (Vol. LX. July, 1875.)
- “Popliteal Aneurysm.” (Vol. LX. November, 1875.)
- “Amputation through the Hip-joint.” (Vol. LXI. January, 1876.)
- “Amputation through the Shoulder-joint.” (Vol. LXV. January, 1878.)
- “Trephining of the Skull.” (Vol. LXV. March, 1878.)
- “Deformed Union after Fracture.” (Vol. LXV. May, 1878.)
- “Strangulated Hernia.” (Vol. LXXIX. January, 1885.)

HENRY KING, M.B. and M.A. Univ. Dubl., M.R.I.A., Fellow of the University of Madras, Deputy Surgeon-General of the Madras Army, died in his sixty-eighth year at his residence, 52 Lansdowne-road, Dublin, on November 6th. During his Indian career, which was highly distinguished, Dr. King had been for some time Principal of, and Professor of Medicine in, the Madras Medical College. He had acted as Editor of the *Madras Monthly Journal of Medical Science*, and in 1875 he published “The Madras Manual of Hygiene.” Since he settled in Dublin, on his retirement from the Madras Medical Service, Dr. King was a constant contributor to our pages. His reviews were well written, candid, and exhaustive; his “Periscope” jottings were sprightly and clever. In these departments of the Journal in particular his many-sided talents will be sorely missed. Dr. King was a thorough Irishman, who loved his country dearly. Until he was overtaken by his fatal illness he was an active Fellow of the Royal Society of Antiquarians of Ireland, and his handsome presence was seldom missing from the “outings” of that scientific body.

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